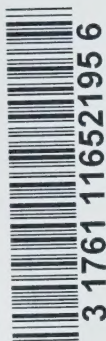


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ENVIRONMENTAL ASSESSMENT BOARD

VOLUME: 119

DATE: Tuesday, June 27th, 1989

BEFORE: M.I. JEFFERY, Q.C., Chairman

E. MARTEL, Member

A. KOVEN, Member



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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental
Assessment for Timber Management on Crown
Lands in Ontario;

- and -

IN THE MATTER of an Order-in-Council
(C.C. 2449/87) authorizing the
Environmental Assessment Board to
administer a funding program, in
connection with the environmental
assessment hearing with respect to the
Timber Management Class
Environmental Assessment, and to
distribute funds to qualified
participants.

Hearing held at the Ramada Prince Arthur
Hotel, 17 North Cumberland St., Thunder
Bay, Ontario, on Tuesday, June 27th,
1989, commencing at 9:00 a.m.

VOLUME 119

BEFORE:

MR. MICHAEL I. JEFFERY, Q.C.	Chairman
MR. ELIE MARTEL	Member
MRS. ANNE KOVEN	Member

A P P E A R A N C E S

MR. V. FREIDIN, Q.C.)	MINISTRY OF NATURAL
MS. C. BLASTORAH)	RESOURCES
MS. K. MURPHY)	
MS. Y. HERSCHER)	
MR. B. CAMPBELL)	MINISTRY OF ENVIRONMENT
MS. J. SEABORN)	
MR. R. TUER, Q.C.)	ONTARIO FOREST INDUSTRY
MR. R. COSMAN)	ASSOCIATION and ONTARIO
MS. E. CRONK)	LUMBER MANUFACTURERS'
MR. P.R. CASSIDY)	ASSOCIATION
MR. J. WILLIAMS, Q.C.	ONTARIO FEDERATION OF
MR. B.R. ARMSTRONG	ANGLERS & HUNTERS
MR. G.L. FIRMAN	
MR. D. HUNTER	NISHNAWBE-ASKI NATION and WINDIGO TRIBAL COUNCIL
MR. J.F. CASTRILLI)	
MS. M. SWENARCHUK)	FORESTS FOR TOMORROW
MR. R. LINDGREN)	
MR. P. SANFORD)	KIMBERLY-CLARK OF CANADA
MS. L. NICHOLLS)	LIMITED and SPRUCE FALLS
MR. D. WOOD)	POWER & PAPER COMPANY
MR. D. MacDONALD	ONTARIO FEDERATION OF LABOUR
MR. R. COTTON	BOISE CASCADE OF CANADA LTD.
MR. Y. GERVAIS)	ONTARIO TRAPPERS
MR. R. BARNES)	ASSOCIATION
MR. R. EDWARDS)	NORTHERN ONTARIO TOURIST
MR. B. McKERCHER)	OUTFITTERS ASSOCIATION
MR. L. GREENSPOON)	NORTHWATCH
MS. B. LLOYD)	

APPEARANCES: (Cont'd)

MR. J.W. ERICKSON, Q.C.)	RED LAKE-EAR FALLS JOINT
MR. B. BABCOCK)	MUNICIPAL COMMITTEE
MR. D. SCOTT)	NORTHWESTERN ONTARIO
MR. J.S. TAYLOR)	ASSOCIATED CHAMBERS OF COMMERCE
MR. J.W. HARBELL)	GREAT LAKES FOREST
MR. S.M. MAKUCH)	
MR. J. EBBS	ONTARIO PROFESSIONAL FORESTERS ASSOCIATION
MR. D. KING	VENTURE TOURISM ASSOCIATION OF ONTARIO
MR. D. COLBORNE	GRAND COUNCIL TREATY #3
MR. R. REILLY	ONTARIO METIS & ABORIGINAL ASSOCIATION
MR. H. GRAHAM	CANADIAN INSTITUTE OF FORESTRY (CENTRAL ONTARIO SECTION)
MR. G.J. KINLIN	DEPARTMENT OF JUSTICE
MR. S.J. STEPINAC	MINISTRY OF NORTHERN DEVELOPMENT & MINES
MR. M. COATES	ONTARIO FORESTRY ASSOCIATION
MR. P. ODORIZZI	BEARDMORE-LAKE NIPIGON WATCHDOG SOCIETY
MR. R.L. AXFORD	CANADIAN ASSOCIATION OF SINGLE INDUSTRY TOWNS
MR. M.O. EDWARDS	FORT FRANCES CHAMBER OF COMMERCE
MR. P.D. McCUTCHEON	GEORGE NIXON

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APPEARANCES: (Cont'd)

MR. C. BRUNETTA

NORTHWESTERN ONTARIO
TOURISM ASSOCIATION

I N D E X O F P R O C E E D I N G S

<u>Witness:</u>	<u>Page No.</u>
<u>BRUCE ADAMSON,</u> <u>SERGE TENAGLIA,</u> <u>NEVILLE WARD,</u> <u>GORDON PYZER,</u> <u>DAVID M. HOGG,</u> Resumed	19856
Continued Cross-Examination by Ms. Blastorah	19856

I N D E X O F E X H I B I T S

<u>Exhibit No.</u>	<u>Description</u>	<u>Page No.</u>
700	MNR's Draft Terms and Conditions.	19853
701	Curriculum Vitae of Mr. Tenaglia.	19855
702	Hard copy of photographs depicting water crossing locations and types to be used by Mr. Adamson in his evidence-in-chief.	19855
703	List of text slides to be used by Mr. Ward in evidence-in-chief.	19892
704	Hard copy of photographs re: good construction practices to be used in Mr. Adamson's evidence-in-chief.	19969
705	Hard copy of slides to be used in Mr. Ward's evidence-in-chief.	19970
706	Map entitled: Canada Indian and Inuit Communities in Ontario.	20003

1 ---Upon commencing at 9:05 a.m.

2 THE CHAIRMAN: Good morning, everyone.
3 Be seated, please.

4 MR. FREIDIN: Mr. Chairman, I would like
5 to just take a few moments before we re-commence the
6 examination-in-chief.

7 We have our draft terms and conditions
8 completed and we are going to want to file those this
9 morning. As you are aware, they were due in early May,
10 according to the original schedule, and we thank the
11 Board for the extensions which have been granted which
12 have allowed us to file them today.

13 And just before I file them, I would just
14 like to make a few brief comments, Mr. Chairman.
15 Firstly, you will recall that it was the Ministry of
16 Natural Resources suggestion that the parties submit
17 draft terms and conditions at an early stage at the
18 hearing process as opposed to the end of the case,
19 which is the normal practice.

20 The Ministry made that suggestion because
21 it believes that in conjunction with the other
22 procedural measures instituted by the Board, such as
23 scoping sessions, that a real possibility for
24 compromise and/or further scoping of issues is created.
25 And it is for those reasons that the Ministry has made

1 an honest effort to be thorough in its analysis of
2 issues in preparing its draft terms and conditions.

3 Secondly, the draft terms and conditions
4 of the other parties are due at the end of the
5 Ministry's case. And if the task of drafting terms and
6 conditions is approached by the other parties in a
7 serious way - and we believe that they will be - we are
8 hopeful that that will result in all the cards being
9 placed on the table, so to speak, so that a meaningful
10 consideration of final terms and conditions can occur
11 at the earliest stage.

12 THE CHAIRMAN: Well, you wouldn't suggest
13 that that would occur before the end of the case?

14 MR. FREIDIN: No, but there could be
15 discussions between parties as to what might be
16 reasonable alterations to draft terms and conditions,
17 what might be added and that sort of thing. And to the
18 extent that agreement can be reached between the
19 parties at an early stage, that hopefully will result
20 in a scoping of the evidence and the issues to be
21 discussed through the balance of the case.

22 THE CHAIRMAN: And then I assume at the
23 end of the case, subsequent to argument, there would be
24 a final set of terms and conditions presented to the
25 Board. Would that be your expectation?

1 MR. FREIDIN: Well, I hadn't really put
2 my mind to it, but I think that that might be
3 appropriate and we would have to consider whether that
4 would be a good way to go.

5 THE CHAIRMAN: Okay.

6 MR. FREIDIN: Thirdly, the Ministry has
7 gone through a great deal of effort to make the draft
8 terms and conditions as comprehensive as possible.
9 This is a complex, integrated package which we hope
10 will be considered carefully and in its entirety by all
11 the interested persons.

12 The draft terms and conditions of the
13 Ministry are based on the evidence and the
14 cross-examination that has taken place to date and
15 proceeds on our best understanding of the issues raised
16 by other parties as well as the Ministry's case.

17 In the final analysis, of course, both
18 the evidence of the other parties and their draft terms
19 and conditions will have to be considered in assessing
20 both the scope and the content of the final terms and
21 conditions of approval.

22 In its draft terms and conditions, Mr.
23 Chairman, the Ministry is making what it believes is a
24 substantial commitment to both the purpose of the
25 undertaking and meeting the requirements of the

1 Environmental Assessment Act in a meaningful and
2 practical manner.

3 So with those few remarks, I would like
4 to take this opportunity to file what I understand is
5 Exhibit 700, the draft terms and conditions submitted
6 by the Ministry of Natural Resources. I should stress,
7 Mr. Chairman, they are draft for the purposes -- or for
8 the reasons I have indicated.

9 THE CHAIRMAN: Very well. And are these
10 going to be distributed to all parties on the full-time
11 correspondence list?

12 MR. FREIDIN: Yes. Yes, they will. And
13 I just have one small correction and one comment --
14 further comment to make after they have been marked.

15 THE CHAIRMAN: All right. Exhibit 700.

16 MR. FREIDIN: (handed)

17 THE CHAIRMAN: Thank you.

18 ---EXHIBIT NO. 700: MNR's Draft Terms and Conditions.

19 MR. FREIDIN: One correction, Mr.
20 Chairman, and I just noticed it this morning, it is a
21 typo. On page 10, paragraph 18, subparagraph (c)
22 refers to condition No. 16, it should be 15.

23 And, Mr. Chairman, just to address a
24 question that you asked yesterday about the
25 Environmental Guidelines for Access Roads and Water

1 Crossings. If you refer to page 17, paragraph 40,
2 there is reference to implementation manuals. If you
3 go to the third line of paragraph 40 it says:

4 "These implementation manuals include
5 provincial guidelines and construction/
6 operational manuals, the use of which
7 is mandatory in timber management."

8 So the provincial guidelines and the
9 construction/operational manuals. If you go over to
10 page 18 and you look at subparagraph (b)(iv) you will
11 see that the Environmental Guidelines for Access Roads
12 and Water Crossings, 1988 fall within that category.

13 THE CHAIRMAN: Thank you.

14 MR. FREIDIN: And perhaps just one other
15 matter that did arise during the examination of Mr.
16 Tenaglia about river drives. There is a term and
17 condition on page 9, paragraph 16 which indicates how a
18 new river or lake drive will be dealt with within the
19 timber management planning process and you will notice
20 it indicates that:

21 "The proposal shall be considered in the
22 timber management planning process as a
23 primary access option and that the
24 planning requirements for primary access
25 shall apply."

1 That particular process for access will
2 be described in more detail in Panel 15.

3 THE CHAIRMAN: Thank you, Mr. Freidin.

4 MS. BLASTORAH: Mr. Chairman, just one
5 preliminary matter this morning. I neglected yesterday
6 when we filed the statement of evidence to file a copy
7 of Mr. Tenaglia's curriculum vitae which apparently was
8 not bound into the statement of the evidence, so I
9 would like to do that now.

10 THE CHAIRMAN: Okay. Exhibit 701.

11 MS. BLASTORAH: And I would just indicate
12 the parties did receive this some time ago. (handed)

13 THE CHAIRMAN: Thank you.

14 ---EXHIBIT NO. 701: Curriculum Vitae of Mr. Tenaglia.

15 MS. BLASTORAH: One other preliminary
16 matter, I have the hard copy of the photographs Mr.
17 Adamson will be referring to first this morning. I was
18 proposing they be marked as Exhibit 702.

19 THE CHAIRMAN: Very well.

20 MS. BLASTORAH: (handed)

21 ---EXHIBIT NO. 702: Hard copy of photographs depicting
22 water crossing location and types
23 to be used by Mr. Adamson in his
 evidence-in-chief.

24 MS. BLASTORAH: Mr. Adamson, perhaps you
25 could give us a title for that page of slides to

1 distinguish it from the last one?

2 MR. ADAMSON: The subject is water
3 crossing location and type.

4 MS. BLASTORAH: Thank you.

5 THE CHAIRMAN: Okay. Ms. Blastorah, just
6 before we start, I just want to put on the record, the
7 Board is intending to continue this morning until
8 approximately 12:45 and then breaking between 12:45 and
9 possibly 2:15.

10 So if you could arrange the evidence in
11 that way, we would appreciate it.

12 MS. PLASTORAH: I think we should be able
13 to work with that, Mr. Chairman.

14 THE CHAIRMAN: Thank you.

15 BRUCE ADAMSON,
16 SERGE TENAGLIA,
17 NEVILLE WARD,
GORDON PYZER,
DAVID M. HOGG, Resumed

18 CONTINUED DIRECT EXAMINATION BY MS. BLASTORAH:

19 Q. Mr. Adamson, can you outline for the
20 Board, please, some of the factors involved in
21 selecting a water crossing site and in deciding the
22 type of structure that should be used?

23 MR. ADAMSON: A. It is difficult to give
24 a generalized answer that would apply in all
25 circumstances, it's so site-specific.

1 However, what I would like to do is show
2 a series of slides that indicate the attributes of
3 various sites, the different types of structure that
4 are in there. These are all examples of water
5 crossings that have been built and that we have been
6 involved with.

7 The first slide is photo No. 1. The
8 particular site and the characteristics of the site
9 directly influence the type of structure that might go
10 in there. Questions that have to be answered are: How
11 wide is the creek, how deep is the water, how much flow
12 is in the creek, how can we get to the far side of the
13 creek in order to construct the crossing, and what are
14 the approaches like, the hills coming down to the
15 creek.

16 And this gentleman here in the photograph
17 is measuring the depth with a stick. It's important to
18 select crossing locations where construction conditions
19 are suitable.

20 MS. BLASTORAH: Mr. Chairman, perhaps I
21 should just indicate that we marked the photo list as
22 Exhibit 698 yesterday. These slides begin at No. 1 on
23 page 2 of that list.

24 THE CHAIRMAN: Thank you.

25 MR. ADAMSON: Slide No. 2 is a photograph

1 of the Chukuni River north of Red Lake and it
2 illustrates the engineering characteristics of a good
3 site on which to build a bridge. These include fairly
4 narrow river width - you can see the narrowing here
5 through the rapids section - shallow water, high flow
6 velocities through a rapids, good foundation conditions
7 on which to build the bridge, relatively easy to divert
8 the water around construction areas, and also there
9 would be less disturbance by construction activities,
10 less turbidity and things. And this is would what we
11 would call a favourable site for building on.

12 MS. BLASTORAH: Q. Mr. Adamson, you
13 indicated there were good foundation conditions. What
14 do you mean by that?

15 MR. ADAMSON: A. The foundations are the
16 soil material that supports the abutments, supports the
17 bridge, and so they --

18 Q. And why do you say they are good in
19 this case?

20 A. Because the boulder or gravel
21 material in the river bottom is probably very strong
22 and able to support the heavy weight.

23 Rapids are also important fisheries
24 habitat because spawning beds may be present that must
25 be protected from sedimentation and because any

1 increase in the flow velocity may affect fish
2 migration. So they are good from an engineering
3 viewpoint, but they also have to be treated with
4 caution because of potential fisheries habitat.

5 This is slide No. 3 and it shows the
6 Chukuni River with the completed bridge. This is the
7 same site as the one shown in the previous slide. The
8 Ministry built this bridge in 1982, and through good
9 engineering design and construction the potential
10 negative effects were mitigated.

11 Erosion and sediment control techniques
12 that are shown in this slide include stable slopes here
13 (indicating) that are graded to a flat enough angle
14 that they will be stable. The area was reseeded, there
15 is a good growth of grass. There is rock rip rap
16 material, we call it rip rap, it's rock fragments that
17 are placed around the crib and on exposed soil that may
18 be subject to flowing water, and this is done to both
19 protect the bridge and also to prevent against erosion.

20 The construction of economical water
21 crossings is best done, we believe, by picking a good
22 site and making sure that any impacts are mitigated.

23 This is slide No. 4. Good sites are not
24 always available because of topographical reasons or
25 perhaps because of areas of concern which mean that the

1 crossing has to be moved away from the most favourable
2 site. And this photo shows what I would consider to be
3 a poor site. It is the Pic River in Terrace Bay
4 District near Manitouwadge, and the road alignment
5 where the bridge is going to be built is shown there
6 with the black line.

7 This is a ground level view of the same
8 site and, again, the proposed road alignment is shown
9 with the line right there (indicating) and some of the
10 characteristics of a poor site are the fine grain
11 soils, these are silty and fine sand soils with a high
12 erosion potential. The water is quite deep and the
13 width is wide, flow velocities are slow.

14 THE CHAIRMAN: Mr. Adamson, why is a
15 faster flow velocity considered better as opposed to
16 poorer?

17 MR. ADAMSON: Because generally a higher
18 flow velocity means that the opening size required
19 would be less, to pass the same flow at another
20 crossing where the flow velocity is low. It is a
21 direct relationship. The higher the velocity, the
22 smaller the opening that is required.

23 MS. BLASTORAH: Q. Mr. Adamson, does
24 that also tie into what you mentioned before about the
25 foundation qualities -- or the quality of the soil or

1 the characteristics of the soil to provide a good
2 foundation?

3 MR. ADAMSON: A. Yes. Usually sites
4 where the water is flowing fairly fast, any erodible
5 soil has been eroded from that site.

6 THE CHAIRMAN: But why does that make a
7 difference in terms of a bridge where you are spanning
8 the river or the creek as opposed to a culvert-type
9 situation where the flow velocity would be narrowed
10 down to go through a pipe? I mean, aren't you spanning
11 the river in any event?

12 MR. ADAMSON: No, we don't necessarily
13 span it the whole width of the water from side to side.
14 In a site like this it is necessary, in order to make
15 sure that the soil doesn't erode, but if I can back up
16 one slide to -- two slides, to this one.

17 This is slide No. 3, the Chukuni River
18 bridge. The original water width at that site was
19 about 120, 130 feet wide. The bridge that we put in
20 there I believe is about 60 feet.

21 THE CHAIRMAN: Okay.

22 MR. ADAMSON: So we are able to constrict
23 the opening. And, in this case, in order to ensure
24 that the water velocity didn't increase through that
25 restricted opening, we actually deepend the channel

1 through here and did some hydraulic modifications to
2 the channel in design.

3 THE CHAIRMAN: Thank you.

4 MS. BLASTORAH: Mr. Adamson, you
5 indicated that sometimes you have to put bridges at
6 poor sites. Do you know why this bridge on the Pic
7 River was put on this -- what you have described, as a
8 poor site?

9 MR. ADAMSON: A. The reason in this
10 particular instance is it is the topographical
11 characteristics of that area. There simply were no
12 favourable sites in the area where they wanted to build
13 the road.

14 Q. Thank you.

15 A. Other factors here are it is very
16 difficult to dewater; in other words, to dry up the
17 construction area when the water depths are deep, there
18 will probably be weak soil conditions on which to build
19 the bridge and, in this case also, there is fairly
20 steep approaches coming down on which to build the
21 road.

22 So at a site like this, any increase at
23 all in the flow velocity can cause significant increase
24 in erosion. You can see the erosion that's going on
25 now with the trees falling down. So there we would

1 tend not to constrict the channel at all, we would have
2 to virtually clear span the river.

3 This is a photograph of the bridge that
4 was built over the Pic River at that site. It was
5 built in 1982 at a cost of \$840,000. And because of
6 the site the bridge needed deep pile foundations
7 underneath the abutments and piers; because of the poor
8 approaches, it needed a very high bridge and it needed
9 a long span, as I mentioned, to clear span the whole
10 flood plane. It also required extensive erosion
11 protection. You can see in the photograph the
12 extensive areas of rock rip rap protection that were
13 laid in the area of the bridge.

14 This slide also illustrates another point
15 which I would like to make, is that where complex
16 bridge designs are required on access roads, they are
17 built and this is certainly a bridge similar to what
18 would be built on a highway. I have shown slides of
19 timber cribs and things which is preferred for small
20 spans, but on larger spans, the engineering and
21 construction effort matches what's required in terms of
22 a bridge.

23 Q. And that was photo No. 6, I believe?

24 A. Yes, this is photo No. 6.

25 This is photo No. 7 and it's of the Pikitigushi River

1 near Armstrong. And what I would like to show on this
2 slide is how shifting the alignment just a few hundred
3 feet can move the crossing from a favourable site here
4 in the foreground to an unfavourable one in the
5 background where there is sand banks and, again, there
6 is evidence that the tree is falling down due to
7 erosion.

8 Q. And again just for the record, what
9 makes the site in the foreground favourable?

10 A. Again, it's a rapids site, it's solid
11 foundations, shallow water, easy to build, and also it
12 offers the opportunity to constrict the channel
13 somewhat.

14 This is why it is important to involve
15 engineers and bridge construction people in decisions
16 that select the crossing location during the five-year
17 planning cycle, and this is something that has come
18 along with the new timber management planning process,
19 is involvement of bridge builders in these decisions to
20 make sure that the site is favourable for construction
21 when it is put down in the plan.

22 This is a photograph of the completed
23 bridge at the Pikitigushi River and it has been
24 performing satisfactorily for the last 11 years. And,
25 once again, you can see how there has been constriction

1 in the natural channel. This span is probably about 70
2 per cent of the original width at that location. So it
3 allows for economical construction.

4 Q. That's slide No. 8?

5 A. Slide No. 8, yes.

6 Q. Do you have any idea how wide or what
7 the span of that bridge is?

8 A. That bridge is 60 feet long.

9 Q. Thank you.

10 A. This slide shows a river crossing
11 where we selected the crossing location with islands in
12 the river. See the islands here (indicating).

13 Q. This is No. 9?

14 A. Yes, slide No. 9. The full river
15 width is about 450 feet, and by selecting this area
16 with the islands we were able to use them like stepping
17 stones. There was two alignments projected on that
18 photograph, they are not too easy to see. This is --
19 my light has gone out.

20 MS. BLASTORAH: We seem to be having some
21 technical difficulties, Mr. Chairman. We need new
22 batteries.

23 MR. ADAMSON: There we go. There is two
24 alternatives alignments shown in the photograph. No. 1
25 is up here at the downstream end. (indicating)

1 MS. BLASTORAH: Q. That's in the
2 background of the photograph?

3 MR. ADAMSON: A. In the background. And
4 No. 2 is in the foreground at the upstream end. And an
5 interesting environmental concern was identified at
6 this crossing. While we had our survey crews out
7 surveying - they in fact surveyed this whole stretch of
8 the river - a local resident informed them that there
9 was a burial mound in this area here. (indicating)

10 So we contacted the regional
11 archaeologist in Thunder Bay and flew him out to the
12 site, I went with him, and he confirmed that in fact
13 there was that find there and, as a result, we
14 abandoned that alternative location and went to
15 alternative two, even though it was -- at that time we
16 felt it was less favourable for construction but the
17 archaeological find that was made there meant that we
18 had to move away from it.

19 Some of the mitigation techniques that we
20 implemented to deal with that were, as I mentioned,
21 relocation of the alignment. There was an
22 investigative dig in the area, not the burial mound,
23 but along the riverbank here and it was funded out of
24 the roads program in order to establish what kind of
25 encampments might have been along the rapids there, and

1 also we tried to minimize any publicity about the site.
2 There was no trails allowed into it, people were told
3 to keep it quiet.

4 So those were the techniques that were
5 implemented and the bridge was constructed in 1980 on
6 the alignment shown there in No. 2.

7 I should mention also in this photo the
8 road was being built from the north coming down this
9 way, and one of the problems that all bridge builders
10 face in new road construction is how to get to the
11 other side because we end up here with all of our
12 equipment and materials and it takes still a head
13 scratching to figure out how to get access in order to
14 build the bridge.

15 The bridges that were put in there were
16 two spans. The first bridge went from this north shore
17 to the island, it was 150 feet long, and the second
18 bridge went from the island to the south shore and it
19 was 130 feet long, a single span.

20 This photograph shows the completed
21 bridge on the south span and it looks from the south
22 shore towards the island. This is photo No. 10.

23 We had problems there accessing that
24 south shore. See how fast that water is moving there.
25 We put some probes down to see how deep it was and it

1 was just too fast to sound the bottom. It was probably
2 at least 10 feet deep. So pushing any kind of a gravel
3 pad or anything to try and reach the other shore was
4 out of the question here. That fast flowing water, the
5 wide width made access a real problem.

6 So as a result the type of bridge
7 selected was this style of bridge here. It looks like
8 a Bailey bridge, actually it is called an Aco-Panel
9 bridge, it is like a modern Bailey bridge. But one of
10 the good features of that type of bridge is that it can
11 be launched from one side of the river like an
12 extension ladder.

13 Q. Mr. Adamson, I believe this is slide
14 No. 11 we are at now--

15 A. Yes, shown --

16 Q. --and the last one showing the bridge
17 was No. 10?

18 A. 10, yes.

19 Q. And could you just explain to the
20 Board in addressing this slide what a Bailey bridge is?

21 A. A Bailey bridge was developed during
22 the second war in England and it was made of sections
23 that could be assembled together in various
24 configurations to build a bridge quickly. I believe
25 the heaviest component in the bridge is about 500

1 pounds. So it can actually be built by just manual
2 labour.

3 And it was developed to allow this type
4 of launching from one side during the war and it has
5 found good use in access roads throughout northern
6 Ontario, particularly after World War II, Hydro used
7 quite a few of them and so did the old Department of
8 Highways.

9 So this bridge can be launched from one
10 side - see a nose sticking up - and it is just pushed
11 all the way across the river until it hits the other
12 shore. So in this particular site, the bridge itself
13 is the means of getting access to the other side.

14 So the point I would like to make with
15 these series of slides is that the particular site and
16 perhaps the access problems often dictate the type of
17 bridge that goes in.

18 So I would like to move away now from
19 water crossing locations and sites and talk a little
20 bit about types of structures that are commonly used on
21 water crossings.

22 For small watersheds a single culvert
23 would normally be installed. Culverts like this one
24 here. (indicating). This is about an eight-foot
25 diameter culvert. This is slide No. 12.

1 A culvert like this is economical and it
2 provides a full travel width on the road, the roadbed
3 for the driver driving over it is just like a piece of
4 road. There is no narrowing at all.

5 Wider creeks may require more than one
6 culvert. This reduces fill height requirements and it
7 also reduces upstream flood levels.

8 Q. Mr. Adamson, how wide would these
9 crossings normally be? Is there any average for --

10 A. For culverts? Probably up to about
11 20-foot wide creek.

12 Q. And would that be one lane of traffic
13 or two?

14 A. No, the road itself is two lanes
15 wide, there is no narrowing of the road over the
16 culvert. So if the water width was more than 20 feet,
17 we would probably start looking at a different type of
18 structure, not a culvert.

19 Q. And are all culvert crossings
20 necessarily that wide?

21 A. Oh no. Many culverts are small, just
22 a few feet wide and a few feet deep.

23 Q. Could you back up to that last one,
24 Mr. Adamson. This is the Vermilion River Road culvert;
25 is that correct?

1 A. It is on the Vermilion River Road,
2 yes, the creek didn't have a name.

3 Q. Mr. Ward, could you just take a look
4 at that photograph and tell me, if this stream were a
5 fish migration route, what effect do you anticipate
6 this type of installation would have?

7 MR. WARD: A. I don't expect there would
8 be any problems with the fish migrating through there
9 for a couple of reasons.

10 The culverts are well placed down and
11 below the substrate so there is a good depth of water
12 in the culvert. And the other thing, there isn't
13 increased or fast water velocity going through there,
14 so the fish wouldn't have any trouble moving through
15 that culvert.

16 Q. Thank you.

17 MR. ADAMSON: A. Okay, that's slide No.
18 13, if I didn't mention it.

19 Slide No. 14 shows an arch culvert. It
20 is an alternative type of culvert. It is founded on
21 two low concrete walls, you can see there in the slide
22 on each side (indicating) and the steel arch rests on
23 those little walls. And it offers the advantage of
24 leaving the substrate in its natural condition. So
25 like a bridge, it preserves the natural river bottom

1 condition.

2 MR. MARTEL: Why wouldn't you use that
3 type then as opposed to -- more frequently as opposed
4 to a culvert, a total culvert?

5 MR. ADAMSON: There is two reasons why it
6 might be used here, Mr. Martel. One would be that in
7 this case it is a rock bottom, it is very difficult to
8 build culverts properly on rock, they tend to ride up
9 on the humps of rock, they are better suited to a
10 gravel pad.

11 And the other reason in this particular
12 crossing was that there is spawning areas here and fish
13 migration routes and the biologist wanted the natural
14 substrate preserved.

15 MR. MARTEL: So, again, it is a
16 site-by-site decision?

17 MR. ADAMSON: Yes, yes.

18 MS. BLASTORAH: Q. And, Mr. Adamson, I
19 think Mr. Martel's question was also intended to ask
20 you why these aren't more -- why you wouldn't use these
21 instead of pipe culverts of the type you have shown us
22 before?

23 You have indicated why this was a good
24 choice for this site. Why wouldn't you use those all
25 the time?

1 MR. ADAMSON: A. Well, a pipe culvert is
2 generally more economical if the site is suitable for
3 it.

4 Q. Would it be necessary to use an arch
5 culvert in the average case where you put in a pipe
6 culvert? Would there be --

7 A. It is an alternative. So is a
8 bridge, a bridge is also an alternative.

9 Q. And if a site were of a type that you
10 felt you should consider something other than an arch
11 culvert, would you do that? Would this be one of the
12 things you might consider, or how would you handle that
13 situation?

14 A. Yes. In terms of dealing with the
15 rock and the fish habitat here, a bridge would have
16 done the same job as this arch culvert. It would have
17 met the same objectives.

18 Q. Thank you.

19 A. In fact the next slide I will show
20 here, which is No. 15, is a very similar type of site
21 and in this case a bridge was used.

22 It is a bedrock bottom and a rapids. I
23 am not aware if there is any fisheries concerns here,
24 but this 25-foot bridge is near Hillsport and it was
25 put in again because really it is more practical to put

1 a bridge in here than a culvert on that bedrock.

2 Q. That is slide No. 15?

3 A. Slide No. 15, yes. This is slide No.
4 16. And for wider crossings, those over about 25 feet,
5 bridges would always be used.

6 This is a typical structure. It shows a
7 typical structure being similar to the standard
8 drawings that we have prepared. It has timber crib
9 abutments on each end made of pressure-treated wood,
10 has steel beams and timber deck.

11 Q. Is this intended as a temporary
12 bridge or a more permanent bridge?

13 A. This particular bridge is more
14 permanent, but a temporary one would look similar to
15 this.

16 Q. And if this were a temporary bridge,
17 you indicated yesterday that materials could be reused
18 or steel components of bridges could be removed. Is
19 this the type of bridge where that could be done?

20 A. Yes, it could be done here. It's a
21 simple matter to take the deck off and take the beams
22 off and they could be reused elsewhere.

23 Q. And one final question. The rock
24 that you have indicated below the bridge, just around
25 the cribs there--

1 A. Yes.

2 Q. --where would that come from?

3 A. That is rock rip rap and the
4 preferred source is a rock cut somewhere on the road.
5 It makes good rip rap because it's fractured and if
6 there are no rock cuts in the area, then it would be
7 made with boulders from a gravel <PEUT>

8

9 Q. Thank you.

10 A. This is photograph No. 17 and it's a
11 photo of Crooked Green Creek bridge in Nipigon
12 District. We replaced it last summer and the operation
13 it shows is placement of the steel beams. And
14 following placement of the beams, the deck is put on
15 transversely just like building a back yard deck and
16 the vehicles drive then on the wooden deck.

17 So they're fairly simple structures, easy
18 to build with unskilled labour. And, as I mentioned,
19 if the use management strategy calls for removal of the
20 bridge or if it's a tertiary road and it's no longer
21 required, the beams could be taken off and they are 100
22 per cent reuseable somewhere else.

23 Q. What is the span of that particular
24 bridge, Mr. Adamson?

25 A. That bridge is about 30 feet long.

1 Q. And how would the cost of that bridge
2 compare to the cost of the temporary extension ladder
3 type bridge that you showed us earlier?

4 A. Like a Bailey bridge?

5 Q. Like a Bailey bridge,

6 A. A Bailey bridge is usually more
7 expensive. These steel beams here cost about \$7,000
8 and a Bailey bridge, for the same length, would
9 probably be about \$20,000. So we prefer these type of
10 steel beams.

11 Q. And when you said that the steel
12 beams cost about \$7,000, do you mean for the total
13 construction, or per beam?

14 A. No, for 3 beams and the connecting --
15 there is connecting beams that go across. So all of
16 the structural steel for that bridge was \$7,000.

17 Q. Thank you.

18 A. This is slide No. 18.

19 Q. I believe it's No. 19, isn't it? No,
20 I'm sorry, I must have marked the same one twice.

21 A. And what it depicts is where soil
22 conditions are weak a pile foundation is necessary.
23 This bridge is supported on piles driven into the soil.
24 The soil at this particular site was not strong enough
25 to support the crib.

1 The photograph also illustrates the use
2 of multiple spans. I think the slides I have shown up
3 to now have all been single span bridges, but obviously
4 where the river is very wide intermediate piers are
5 introduced and can be a multiple span bridge.

6 Q. What are the sort of orangey looking
7 components --

8 A. These?

9 Q. Yes, attached to the piles?

10 A. These little outbreakers here are
11 like ice deflectors. They are a few extra piles, that
12 front one is driven on an angle, and then it's sheathed
13 with timber and that orange thing is probably a steel
14 plate. So that any ice coming down here will hit that
15 and tend to ride up and break up.

16 Q. What is the purpose of those?

17 A. Oh, to break up the ice so it isn't
18 impacting directly on the piles that support the
19 bridge.

20 Q. Thank you.

21 A. An untreated log bridge is an
22 economical structure for spans less than 20 feet.

23 Q. This is photo 19?

24 A. Photo 19, yes. And, as I mentioned
25 yesterday, it is now a requirement that where these log

1 bridges are used they have to be removed before the
2 timber decays to an extent that it could affect the
3 structural capacity. But they are certainly still an
4 economical bridge for short-term access.

5 Q. And you said it's a good solution or
6 an economical structure for spans of less than 20 feet.
7 Is that a maximum or why do you say 20 feet?

8 A. It's a maximum because of the size of
9 logs that are available in Ontario. Generally it's
10 hard to find logs more than about 20, 24 inches in
11 diameter and when we analyse these to carry the heavy
12 trucks, we find it's hard to get spans much more than
13 20 feet long and be able to carry the loads.

14 Q. Thank you.

15 A. I should mention also, the package of
16 photographs that was Exhibit 702 is missing this
17 particular photograph. We are going to get copies made
18 and we will give them out later.

19 Q. And Mr. Adamson, is this a good
20 example or an example of a good log bridge?

21 A. I think it probably is, yes.

22 Q. Could you point out some of the
23 features of that?

24 A. Well, it has log cribs here and these
25 are log stringers. They are not peeled logs. We

1 recommend that logs be peeled if they are needed more
2 than five years. Leaving the bark on tends to trap the
3 moisture in the logs, so it will probably decay faster
4 than a peeled log would. It also has big heavy curved
5 timber here and all of the materials for that
6 particular bridge came out of the bush.

7 Q. And would some of the things that you
8 just mentioned, such as peeling the logs, would they be
9 included in the log bridge construction manual that we
10 filed yesterday?

11 A. Yes. Techniques and guidelines on
12 working with logs like this and things like, there is a
13 cable here tying the curve down, these are all detailed
14 in the log bridge manual.

15 Q. And that is Exhibit 699.

16 A. Okay. The main messages that I
17 wanted to get across with that series of slides were,
18 firstly, that each water crossing is different and
19 designs of construction practices, mitigation
20 techniques are selected to suit the site involved.

21 The second message I wanted to show was
22 that the site selection for larger crossings could have
23 a significant influence on the particular design. So
24 generally the site and the design go hand in hand.

25 And the third point I wanted -- the third

1 and final point was that we believe the potential
2 detrimental effects of water crossings can be reduced
3 to acceptable levels by good engineering and
4 implementation of mitigation techniques.

5 Q. Mr. Adamson, what are the main
6 operations involved in constructing a bridge?

7 A. Okay. Again I would like to put on
8 the overhead projector.

9 Q. Okay.

10 A. Each bridge is different from the
11 others and it's again difficult to generalize, but this
12 shows a typical schedule for water crossing
13 construction. Down the left column are various
14 operations, and in the horizontal direction would be
15 the time frame, say weeks.

16 And the operations involved are planning,
17 engineering, and I should note, there is a bit of
18 overlap there and that's the overlap where the
19 engineering people should get involved in the planning
20 phase.

21 There is need to mobilize special
22 equipment and manpower. There's a need for access, how
23 to get to the far shore. There is initial need for
24 access and then at the very end it's usually removed.

25 The substructure work is the foundations,

1 the abutments, dewatering the site, getting a site that
2 is dry to work on.

3 The superstructure is those components
4 that sit on the abutments, the steel beams or stringers
5 and the deck.

6 And the final component are the approach
7 road and restoration, and by restoration, I mean
8 trimming of the banks, putting in the rip rap, perhaps
9 seeding, those types of mitigation techniques.

10 And these operations are described in the
11 evidence, I am not going to say any more about them
12 here, and this is Exhibit 696M.

13 Q. And that is Figure 6.3 in the written
14 material I believe?

15 A. Yes.

16 Q. Mr. Adamson, we have heard now about
17 road and water crossing construction practices. What
18 about maintenance which was the topic raised by NOTOA
19 in their Interrogatory No. 15 and the Ministry of the
20 Environment in their Interrogatory No. 25?

21 A. I would like to explain a little bit
22 about road maintenance. Roads are maintained by the
23 forest industry and by the Ministry during the time
24 that they are required for timber management
25 activities. And the level of maintenance that a road

1 receives -- the level of maintenance that a road
2 receives varies throughout its life depending on the
3 use that is being made of the road. The highest level
4 of maintenance would be during the extraction of wood
5 when heavy high speed logging trucks are using the
6 road. At that time it would receive the highest degree
7 of maintenance.

8 And by maintenance, the operations
9 referred to are road grading with a grader to remove
10 potholes and to shape the road, snow plowing in the
11 winter time, removal of culvert blockages and another
12 one is the removal of roadside brush. And these are
13 all described in the evidence and, again, I won't
14 repeat them here again.

15 Q. Mr. Adamson, you have indicated that
16 the highest level of maintenance would be during the
17 time which the road is used to transport logging
18 trucks. Who does that maintenance at that time?

19 A. The majority of roads are maintained
20 by the forest industry. There are a few maintained by
21 the Ministry. And there are -- in the Environmental
22 Guidelines for Access Roads and Water Crossings, there
23 are guidelines that apply to road maintenance
24 activities.

25 Q. There were a number of

1 interrogatories about road maintenance and abandonment.
2 What happens to a road when it is no longer required by
3 the forest industry for its operations? And perhaps I
4 would just refer, for the Board's purposes, to the
5 interrogatories I'm concerned with. They were Ministry
6 of the Environment No. 3, No. 22 and NOTOA No. 34.

7 A. The use management strategy that is
8 developed for the road at the planning stage would
9 indicate a maintenance strategy to be followed when
10 it's no longer required for timber management.

11 Usually responsibility for the road and
12 for the water crossings would pass to the Ministry.
13 And with the large mileage of road involved -- with the
14 large mileage involved and the limited resources
15 available for road maintenance, it's neither practical
16 or necessary for the Ministry to continue maintaining
17 all roads to the same standard that they were
18 maintained during the use for timber management.

19 Basically two courses of action can be
20 followed by the Ministry. One is to take over
21 maintenance of the road where other uses justify it, or
22 the second alternative is to abandon the road.

23 Q. Mr. Adamson, could you expand on
24 those points and, in particular, could you indicate why
25 you don't feel it's practical or necessary to maintain

1 all roads?

2 A. Well, the road is maintained for a
3 particular use and many of these roads, when the timber
4 management ends, the use that is made of the road just
5 can't justify the costs involved. And by use I mean
6 two or three vehicles a week. Some of them don't see
7 much traffic.

8 I would like to explain a bit on the road
9 maintenance. It's carried out by the Ministry on a
10 priority basis and according to the use management
11 strategy. The highest priority roads would probably
12 receive routine maintenance such as gradings, surface
13 gradings and the lowest priority roads would not likely
14 receive any regular maintenance.

15 However, when emergencies arise, they
16 would be dealt with. And by emergencies I refer to
17 things like washouts or a bridge that is in serious
18 trouble, it would be replaced to restore access, but
19 the particular road may not receive too many gradings.

20 Guidelines for setting priorities for
21 road maintenance funding are provided to district staff
22 and regional staff and in the current fiscal year,
23 1989-90, the direction that we are receiving is that
24 the first priority is for public safety on roads and
25 bridges, including inspections and the placement of

1 warning signs, advisory signs.

2 Q. And you mentioned signs yesterday,
3 Mr. Adamson. What guidance would somebody dealing with
4 that concern of public safety have in the sort of sign
5 that might be placed there or how that sign should be
6 placed?

7 A. I think the best direction available
8 now is in the Bridge Management Report and there is a
9 section there dealing with the liabilities issues and
10 recommended signage of roads.

11 Q. And that is Exhibit 686?

12 A. The second priority after public
13 safety issues is contractual obligations. The Ministry
14 is in some contracts regarding roads. And, for
15 example, I am thinking of railway crossing agreements
16 where there may be a private crossing agreement where
17 we fund the maintenance of a crossing by the railway
18 authority, and also there are road maintenance
19 agreements with various companies or individuals where
20 we cost share the maintenance. So those contractual
21 obligations would be the second priority.

22 And the third priority would be emergency
23 repairs on high priority roads to keep the roads open.
24 And, as I mentioned, that could include removal of a
25 beaver dam that could be blocking a culvert or

1 replacement of an old bridge.

2 And with the increased emphasis on bridge
3 management now, there is a lot of resources going
4 towards fixing the old bridges. Last year, as I
5 mentioned, in the two regions I look after there was a
6 total of 50 dealt with out of a total population of
7 about 311 bridges.

8 After these priorities are looked after
9 then road gradings are done, brush control and the
10 other maintenance activities are lessened.

11 If other uses can't justify continued
12 maintenance, the road will be abandoned either
13 physically or naturally. These two terms that are
14 introduced in various documents, including the
15 Environmental Guidelines for Access Roads and Water
16 Crossings, and what we term a natural abandoned road is
17 one on which maintenance is not carried out but it
18 remains open to travel for users who wish to use it.
19 Many of these roads are used by anglers and hunters for
20 recreational purposes.

21 By calling it naturally abandoned and
22 non-maintained, what that means is if there is a
23 washout or if something happens on the road, it
24 wouldn't be fixed.

25 Q. Would that be true in all cases?

1 A. On abandoned roads?

2 Q. Yes.

3 A. Well, sometimes when something like
4 that happens we start to learn who is using that road
5 and it may in fact become something that action is
6 taken on.

7 Q. And if a concern were raised that a
8 particular washout, for instance, were having
9 significant environmental effects, would something
10 possibly be done about that?

11 A. Certainly, yes. The second type of
12 abandoned road is what is called physically abandoned
13 road and it's one on which specific actions are taken
14 to reduce potential environmental impacts due to
15 natural forces acting on the road. And this could
16 involve removal of water crossings. For example, a
17 particular culvert or a bridge that's been prone to
18 blockage or on-going maintenance, the decision may be
19 to physically remove it in order to prevent its falling
20 down or washing out.

21 And in making a decision to remove a
22 water crossing, the factors that are considered are the
23 effects on the road users obviously and also the
24 potential adverse environmental impacts in case it did
25 fail, and that could include public safety and aquatic

1 habitat.

2 Q. And I believe the Ministry of the
3 Environment asked an interrogatory about that point in
4 their No. 22..

5 A. Yes, with respect to what factors are
6 considered and the two being the potential
7 environmental effects and the effects on users of the
8 road.

9 Q. And can removal of culverts and so on
10 or bridges during physical abandonment, can that ever
11 have a negative environmental effect?

12 A. It could have an effect, a short-term
13 effect during the actual operation, yes.

14 There are measures provided in the
15 Environmental Guidelines for Access Roads and Water
16 Crossings containing recommended practices for physical
17 abandonment to reduce erosion, to reduce long-term
18 problems that might occur due to no maintenance going
19 on.

20 MS. BLASTORAH: Mr. Chairman, we intended
21 to have Mr. Ward give his evidence at this time.
22 Perhaps it might be appropriate to take a short break
23 to allow him to get set up.

24 THE CHAIRMAN: Okay. Just before I
25 forget, Ms. Blastorah, in glancing through these

1 conditions of approval, in my copy pages 20 through 26
2 are repeated twice.

3 MS. BLASTORAH: Oh.

4 MR. FREIDIN: We don't want two times the
5 conditions.

6 THE CHAIRMAN: They have got the same
7 numbers.

8 MS. BLASTORAH: You would have to enforce
9 those ones twice as hard.

10 THE CHAIRMAN: Obviously when it was
11 collated, a couple of pages got stuck together. I
12 don't know if that is the case with all other copies.

13 MS. BLASTORAH: I know we did attempt to
14 make some extra copies last night and it could be that
15 in t he rapid photocopying there was a missorting done.

16 MR. FREIDIN: Not in the ones I have. I
17 will find four copies that have the right number of
18 pages.

19 THE CHAIRMAN: Okay. Maybe it's just
20 mine. It doesn't matter. Anyways I will leave it
21 here, if you want to replace with a--

22 MR. FREIDIN: All right.

23 THE CHAIRMAN: --fresh one, that's fine.

24 Thank you.

25 We will come back in 20 minutes.

1 ---Recess taken at 10:00 a.m.

2 ---On resuming at 10:35 a.m.

3 THE CHAIRMAN: Thank you. Be seated,
4 please.

5 MS. BLASTORAH: Mr. Chairman, I indicated
6 to Mr. Mander and some of the other counsel during the
7 break that I don't think we will have any problem
8 finishing in fairly good time today. So if people want
9 to make their flight plans accordingly. I don't
10 anticipate we will go past five o'clock.

11 If worse comes to worse, it may be
12 necessary to sit a little longer, perhaps until six to
13 finish, but I don't anticipate any problem finishing
14 today.

15 THE CHAIRMAN: Very good. Thank you.

16 MS. BLASTORAH: The other thing I would
17 mention is that after Mr. Ward finishes his evidence,
18 which we anticipate will be approximately an hour, we
19 plan to come back to Mr. Adamson and he's intending to
20 be about 45 minutes to an hour.

21 He is, however, going to do another short
22 slide presentation and I would prefer not to interpret
23 that, if possible. Would it be possible for the Board
24 to sit until one o'clock, if necessary, before taking
25 the lunch break?

1 I know you have something else you have
2 to do --

3 THE CHAIRMAN: Yes, provided it's not
4 longer than one.

5 MS. BLASTORAH: Perhaps the best thing to
6 do is leave it until the end of Mr. Ward's evidence and
7 see how we are doing at that point.

8 THE CHAIRMAN: Okay.

9 MS. BLASTORAH: I don't anticipate it
10 will be a major problem.

11 Q. Mr. Ward, I understand that from time
12 to time you have been and are involved in training
13 workshops provided by the Ministry for forest industry
14 and ministry staff in relation to potential effects of
15 access on the aquatic environment?

16 MR. WARD: A. That's correct, yes.

17 Q. And I understand you have a series of
18 slides you would like to present to the Board today
19 which is similar to the type of presentation you give
20 in that forum?

21 A. That's right. If we can have the
22 lights, Mr. Freidin.

23 MR. FREIDIN: Yes, Mr. Ward.

24 MS. BLASTORAH: Oh, Mr. Chairman, perhaps
25 before Mr. Ward begins we should mark his photo list

1 which contains the text of the text slides, I believe,
2 so people may want to follow along with that.

3 THE CHAIRMAN: Okay. Exhibit 703.

4 ---EXHIBIT NO. 703: List of text slides to be used by
5 Mr. Ward in evidence-in-chief.

6 MS. BLASTORAH: (handed)

7 THE CHAIRMAN: Thank you.

8 MS. BLASTORAH: Q. And, Mr. Ward, if I
9 could just ask you to indicate the photo number when
10 you change slide s on the overhead?

11 MR. WARD: A. I will try to remember.

12 Q. Thank you.

13 A. The first slide I have up is the four
14 main messages that I would like to leave with the
15 Board.

16 The first one is the principal concerns
17 with regard to effects of access on the aquatic
18 environment relate to sedimentation and blockage of --
19 sedimentation of critical fish habitat and blockage of
20 fish migration routes.

21 The second point is that in the past the
22 causes of sedimentation and blockage of fish migration
23 have been poorly designed or installed culverts and
24 erosion of fill and ditch slopes which I will explain
25 in my slide presentation.

1 These potential causes of sedimentation
2 and blockages will now be avoided or mitigated through
3 application of the Environmental Guidelines for Access
4 Roads and Water Crossings, as Mr. Adamson has mentioned
5 in his direct evidence.

6 And the fourth point, in some cases, it
7 is possible to create or enhance fish habitat through
8 specially designed water crossings, and I will show the
9 Board some examples of that as well.

10 MS. BLASTORAH: Again, Mr. Chairman, I
11 would point out these points are all listed right on
12 the photo list.

13 THE CHAIRMAN: Okay. Thank you.

14 MR. WARD: This is my title slide, Roads
15 and Water Crossings, and it's a picture of Paintpot
16 Creek shot from the air in Kenora District with a
17 logging truck going across the arch culvert that Mr.
18 Adamson showed in a previous picture.

19 The question I am asked is: Do roads
20 harm fish habitat? It is not necessarily so. It
21 depends on how the crossing structure is designed and
22 installed. If they are not installed properly there
23 could be increased erosion and sedimentation of
24 critical fish habitat and/or you could have blockages
25 or delays to fish migrations.

1 And I will go through my slide
2 presentation talking about sedimentation of critical
3 fish habitat first, and then I will go and talk about
4 the problems with fish migrations.

5 One of the causes of erosion and
6 subsequent sedimentation is if waterway opening sizes
7 are not properly designed.

8 In this case, this is the White Mud River
9 in Red Lake District in 1982 and it is not that obvious
10 to see in the light here, but this flow of water, the
11 culvert, is really taxed to its upper limit in the
12 amount of water that's coming out of here.

13 MS. BLASTORAH: Q. Is this the
14 downstream or the upstream that --

15 MR. WARD: A. This is a downstream view
16 of that culvert. And in 1986 this culvert washed out,
17 it couldn't handle the flood flow at that time of year.
18 And you can see there is quite a bit of sediment that
19 has moved downstream and can affect -- if there are
20 spawning areas downstream it can affect some critical
21 fish habitat.

22 Q. And that is photo No. 5?

23 A. Yes, photo No. 5, right. The next
24 one, photo No. 6, is a smaller waterway opening size,
25 it's a log culvert. Again, it wasn't adequate for

1 handling the flood flows. This is photo No. 6 and it
2 is a picture taken in 1982 by myself in Sioux Lookout
3 District. Again, this was not properly engineered.

4 Q. Could you back up for just a minute,
5 Mr. Ward. Mr. Adamson, is that a standard type of
6 construction?

7 MR. ADAMSON: A. In the past there has
8 been log culverts used. I think nowadays it would be a
9 steel culvert pipe.

10 Q. And as far as a log culvert
11 installation, do you see any problems with this one?

12 A. It appears to me the opening size is
13 too small.

14 Q. Thank you.

15 MR. WARD: A. Photo No. 7 is entitled:
16 A Fillslope Erosion which is another source of
17 sediment or can be a source of sediment to the aquatic
18 environment.

19 In this case, the fillslope is too steep
20 and I am told by my engineer here beside me that if the
21 culvert had been longer they could have had a more
22 stable slope there and could have prevented this kind
23 of erosion from occurring. This is Manion Creek in
24 Fort Frances District.

25 MS. BLASTORAH: Mr. Chairman, I would

1 just point out, I don't intend to interrupt Mr. Ward
2 too often to ask for comments on the engineering side
3 of this because Mr. Adamson's next presentation is
4 going to deal with how a lot of these problems are
5 addressed from the engineering standpoint.

6 THE CHAIRMAN: Very well.

7 MR. WARD: Another example of fillslope
8 erosion is of Corrigan Township Road in Nipigon
9 District, picture taken in 1984. And, again, the same
10 kind of problem with a shorter culvert and a very steep
11 fillslope.

12 MS. BLASTORAH: Q. That is photo No. 8?

13 MR. WARD: A. Photo No. 8, right.

14 Q. Mr. Ward, I am going to make the same
15 deal with you that has been made with witnesses in the
16 past, for every photo number you forget to mention, you
17 have to pay me a dollar.

18 A. A dollar!

19 Q. I think that's the tradition.

20 A. How about if every one I --

21 MR. FREIDIN: You have to pay him for
22 every one he does mention.

23 MS. BLASTORAH: Fair enough.

24 MR. WARD: Photo 9 is entitled:
25 Ditchslope Erosion. This is a shot of, again, Manion

1 Creek and you can see the ditches that are approaching
2 the creek and both of the opposing banks have eroded.
3 You can't see it too clearly in this picture with the
4 light, but there was an attempt to seed these
5 ditch slopes with grass, but the slopes were too steep
6 for -- even for grass to hold back this kind a gully
7 erosion that's occurred.

8 Again, the road guidelines talk about
9 techniques and Mr. Adamson will, in his presentation
10 after mine, illustrate some of these that -- to prevent
11 this kind of ditch slope erosion from occurring.

12 MS. BLASTORAH: Q. Could you point out
13 where that is on the slide?

14 MR. WARD: A. Well, here in the
15 foreground you can see quite a large gully here, it is
16 about three or four feet deep, which is running right
17 into the creek. And then there are other gully lines
18 as well coming down here in the ditch slope.

19 This is Reid Creek in Red Lake District.
20 Here again is a large gully and this slope going down,
21 and on the opposite bank - you can't see it here - but
22 there isn't any erosion occurring because the
23 vegetation was left in tact and this is one of the good
24 practices and things that we are encouraging in road
25 building to try and leave a lot of the vegetation in

1 tact here to prevent this kind of gully erosion and
2 subsequent sedimentation of the aquatic environment.

3 Photo 11 is entitled: Why Are Fisheries
4 Managers Concerned With Erosion. This illustration
5 basically shows that sediment can end up in spawning
6 areas downstream here at the bottom of the picture.
7 (indicating)

8 You can have good culvert crossings here
9 with no erosion, your vegetation in tact and the bridge
10 in the main river in the centre, but if you have a
11 culvert on a tributary stream that is causing erosion
12 and it may look like it is not a very significant
13 stream in terms of providing, you know, fishing or that
14 kind of thing, there are water quality concerns that we
15 would have and also it could be downstream fish habitat
16 concerns, because this silt can be transported by the
17 water, and depending on the density of the sediment and
18 so on, it depends on how far it will go, but it has got
19 a good chance of it if there is a spawning area down
20 here, to have it act as a trap for sediment and
21 sediment can fill in these spawning areas.

22 Q. What photo number was that, Mr. Ward?

23 A. That was 11 and this is No. 12 which
24 shows the sort of a cross-section of a spawning area.
25 I want to point out a couple of things to the Board,

1 that it's important to have clean, what we call,
2 interstitial spaces. These are the spaces inbetween
3 these rocks for eggs to develop.

4 A lot of our fish in northwestern Ontario
5 or in Ontario, the area of the undertaking, are
6 broadcast spawners. They basically spawn over top of
7 these rocks and the eggs drop in and fall inbetween
8 these rocks. And actually a lot of eggs, when they are
9 in the water, they start to swell up. So as they fall
10 they swell up and they get lodged in these crevices or
11 interstitial spaces.

12 And it's important to have clean rock
13 here so that you can allow water to move through it
14 gradually and that's why a lot of spawning areas are in
15 rapid areas or on shoal areas that are windswept, so
16 you get currents going through these rocks. And this
17 is to bring in oxygen to the eggs and take away waste
18 like carbon dioxide.

19 If you have sediment, like here in the
20 example on the right, you are going to block all of
21 these interstitial spaces and you are going to prevent
22 this gas exchange from occurring.

23 The other factor too is -- the reason we
24 got this picture of a rock bass here is if the eggs
25 deposited on the top here, predators like this rock

1 bass can pick them off and feed on them. And I have
2 been involved with several tagging operations of
3 walleye spawning operations in the spring and we often
4 catch white fish in our trap nets and these fish are
5 around looking at picking up stray walleye eggs and
6 that type of thing.

7 So it's important to try and have these
8 rocks clean and get these eggs deposited in deeply so
9 they are protected from predation as well.

10 This is diagram No. 13 which is showing
11 that fry - and the title here is Salmon Alevins - these
12 are just fry with the yoke sack on them. The emergence
13 of these fry declines as the percentage of fine
14 sediment increases, which is on the horizontal axis.

15 And basically this kind of relationship
16 occurs with most fish that are spawning in gravel or
17 rock/rubble areas, that the percentage of fine sediment
18 that occurs the -- as it increases you will get fry
19 emergence declining, and this is a trend that is found
20 in most of the literature that's tried to document this
21 thing.

22 And it would be a concern as well for
23 fish managers in Ontario with the kind of fish that we
24 have that are also spawning in rock/rubble, gravel
25 areas.

1 Q. Mr. Ward, just on that last slide,
2 the numbers that are shown on that graph, would they
3 necessarily relate to the Ontario context?

4 A. It may not be exactly the same kind
5 of percentages, the curve may not have exactly the same
6 kind of shape in terms of this kind of quick decline
7 here but, you know, it could change like this or it
8 could be another slope that way. But generally the
9 slope would be, I would expect, to be declining as you
10 get the percentage of sediment increasing.

11 This is slide No. 14 which is a
12 photograph illustrating predicted coho salmon fry
13 emergence from three different mixes of gravel and
14 sediment. Basically this slide was based on work by a
15 man named Phillips in 1975 where they were
16 experimenting in a laboratory-type situation of putting
17 coho, and they also used rainbow trout fry as well
18 which we have in Ontario spawning in some of our
19 rivers. We have coho, of course, in the Great Lakes.

20 They added -- this is the top view and
21 this is the side view of these different types of
22 spawning substrate that they created in the lab and
23 they added -- they have different types of mixes, mix 1
24 mix 2, mix 3, and they had different types of sediment
25 adding to these types of rocks.

1 And I wanted to give this slide to
2 illustrate to the Board the kind of amount of sediment
3 that you can have and the kind of emergence that you
4 would get. They, of course, developed the regression
5 equation here indicating the amount of fry emergence
6 versus the amount of sediment that they deposited,
7 actually measured it and calculated the amount added
8 into the rock/rubble areas.

9 The point here in clean and rock/rubble
10 area they are getting a very high 98 per cent
11 emergence, where you add a fair bit of sediment your
12 emergence drops down to about 51 per cent, and you add
13 even more sediment basically covering the rocks, you
14 get about 22 per cent. They actually inserted fry into
15 the gravel and then evaluated the number of fry that
16 came out.

17 Again, you know, it's not -- even with
18 some sediment on it you are not completely necessarily
19 destroying the spawning area, there is going to be some
20 emergence that occurs and hatch but, you know, again it
21 is about basically less than a quarter than you would
22 get if you kept nice clean rocks.

23 And that's the objective of fish
24 managers, is to keep our spawning areas in good shape
25 and maximum fry production from them.

1 Q. Mr. Ward, just a couple of questions
2 on that. You indicated they used three different
3 mixes. Could you just explain what you mean by the
4 mix?

5 A. Well, the mix is -- a mix of the
6 rubble with a sand material which was the fine
7 sediment, I think it was about 3.3 ml in diameter that
8 they used to evaluate the impact on fry emergence.

9 Q. And, again, did you intend this
10 diagram or this photograph and the figures shown there,
11 the 98 per cent, the 51 per cent and the 22 per cent,
12 to be representative of absolute figures applicable to
13 Ontario or did you intend this to be more
14 representational?

15 A. Yeah, more representational, it's to
16 indicate again the same kind of trend that occurs. And
17 the reason I like this slide is because it actually
18 shows some rock/rubble with different types of sediment
19 to illustrate the point I am trying to make more
20 clearly.

21 Q. Thank you.

22 A. This is slide No. 15. It is a
23 histogram illustrating walleye egg survival. It is
24 based on some work in Minnesota. It's a figure 1 that
25 is presented in my written evidence on page 277 in the

1 evidence.

2 And basically walleye, of course, is one
3 of the main species of fish that we manage in Ontario
4 and, again, we have the same kind of results indicating
5 here that if you have a gravel/rubble area they found
6 they got a 25 per cent survival of walleye eggs to fry.

7 If you added fine sand, if they were
8 spawning on fine sand, it drops down to about 8.6 per
9 cent, or basically one third what you would get out of
10 a gravel/rubble area.

11 And, of course, if you had muck-detritus
12 in that very fine glaze and silts, that type of thing,
13 on a spawning area, you are dropping it down basically
14 to one-tenth the type of fry production as you would if
15 you kept it -- maintained it as a clean gravel/rubble
16 area.

17 One last point in terms of an effect of
18 sediment on fish habitat. I have been talking about
19 spawning areas, rock/rubble areas and gravel areas
20 mainly, but also sediment can affect aquatic vegetation
21 areas, they can smother and kill off the life support
22 system of insects and other aquatic life that fry feed
23 on. And this is--

24 Q. Slide No. --

25 A. --slide No. 16.

1 Q. You beat me to it, Mr. Ward.

2 A. --that shows, you know, some insect
3 larvae being affected. In some cases you will get a
4 change -- if this is a permanet type of situation, you
5 may get a change of the kinds of aquatic invertebrates
6 that occur in terms of -- especially if you had
7 sediment occurring like this and it stayed on a
8 rock/rubble area with invertebrates. You have certain
9 kinds tha tlike rock/rubble areas and certain kinds
10 that live in sort of sand or sediment.

11 And so you may get the same numbers of
12 invertebrates per square metre or whatever, but they
13 may not be as available to food or as for food for fish
14 because they are buried in sediment; and whereas, a lot
15 of invertebrates that are rock lovers, they are more
16 available for fish to pick them off and feed on them.

17 So there is a concern on the effect of
18 sediment on fish feeding areas and if their aquatic or
19 vegetation areas as nursery areas for fish as well.

20 Now, slide 17 is -- reads that Mitigation
21 of Potential Impacts of Water Crossings on Fisheries
22 Habitat and Water Quality or How to Prevent Erosion.
23 And I will just go briefly through some of the
24 mitigation things that we are talking about here. Mr.
25 Adamson a little bit later will go into it from an

1 engineering point of view.

2 From a biologist, if we are concerned
3 about a spawning area that we have noticed from
4 topographical maps and aerial photographs, looking at
5 it in the terms of timber management planning process,
6 where we are checking the location of water crossings,
7 and as was indicated in earlier testimony by Mr.
8 Tenaglia, we are talking water crossings that are
9 narrowed down to basically 100 metres at the five-year
10 plan when they are going through an area of concern,
11 such as a water crossing here.

12 And slide 17 is -- or slide No. 18 is
13 entitled: Check Location, and we do use helicopters.
14 In this case, we were with company people looking at
15 some proposed water crossings. This is Lenin Creek in
16 Kenora District and we were looking at the narrow
17 channel here. There is an island here in the middle
18 and there is -- the river channel is divided on both
19 sides. And you can tell from aerial photographs, you
20 can normally spot rapid areas and that type of thing.
21 It looks like it has some potential for a spawning
22 area, and this is worth a site to go and have a site
23 visit.

24 So slide No. 19 entitled: Visit the
25 Site. This is, again, Lenin Creek. We are on the

1 ground and this is one side of the channel, this is the
2 island here on the left of the slide. (indicating)

3 And we are looking -- there are certain
4 types of rock here, rock/rubble which is a kind of area
5 that walleye and other fish that we know that occur
6 downstream could use this area to spawn in. And this
7 is the kind of information a biologist would have in
8 terms of lake surveys which I talked about in Panel 7,
9 information of the kind of fish species downstream, as
10 well as upstream of this site that might utilize
11 rock/rubble areas for spawning areas.

12 Slide No. 20 is entitled: Discuss
13 Options. Here is the picture again at Lenin Creek with
14 Bruce Randa who is the district fisheries biologist
15 there talking with three company people in terms of the
16 best location for a water crossing here to avoid or
17 minimizing the impact on the spawning area at this
18 location.

19 In this case, the option chosen was to
20 develop some larger size culverts, a couple of barrel
21 culverts here above the spawning area so that we
22 weren't impacting on the spawning area at all by
23 building a structure on top of that.

24 Q. Mr. Ward, could you just back up to
25 slide No. 19 for a minute. I see there is quite a bit

1 of what looks like wood debris in the creek there. Do
2 you have any idea how that got there?

3 A. Well, chances are this is, you know,
4 just looking at the age of it and everything, when we
5 were at the site here looking at this, I would expect
6 that would be natural debris that's fallen in from the
7 upstream lake that has floated, or whatever, drifted,
8 downstream and have been caught.

9 This is at the low water time of year.
10 We were there in I guess late -- towards late summer
11 and this would be left stranded here on top of these
12 rocks. I expect, in terms of spring freshets, these
13 logs would probably be moving downstream. They are not
14 dense enough or cause enough of a problem to be the
15 fish migration problem or as a blockage and there isn't
16 a lot of fine material there which would -- I would be
17 concerned with, like needles and small twigs and that,
18 that could go in and fall in the interstitial spaces in
19 the rocks and cause problems for fish spawning in that
20 case.

21 So I don't see them as any kind of
22 problem for fisheries there.

23 Q. Thank you.

24 A. This is slide No. 21 which is a
25 diagram illustrating three possible crossing locations.

1 The kind of discussion, I just wanted to illustrate for
2 the Board, that we might get involved with company
3 staff or our own staff that are building roads in terms
4 of deciding where to cross.

5 If we were looking at a crossing of a
6 river here which is flowing basically from right to
7 left and we are looking at different options at where
8 to cross and we have got rapids in the centre which we
9 have identified as a potential spawning area for, you
10 know, for example, if there are walleye in this lake
11 downstream that could use this as a spawning area, and
12 there are no natural impediments for them to access
13 this rapid area, this is the kind of thing we would
14 check with a helicopter to see if there any beaver dams
15 or if there are other kinds of steep waterfalls or
16 whatever that may be not allow fish to get to this
17 spawning area.

18 We would -- you know, that's the kind of
19 thing we would determine how critical it is. But if
20 they had a free enough run basically, the fish are
21 getting to this area, you would say: Yes, it has a
22 potential for spawning and we want extra care here.

23 In terms of the choices of how we would
24 cross if -- because it is narrower here, as Mr. Adamson
25 was talking about, and the preferred choice from an

1 engineering point of view to cross here with a bridge,
2 this in many cases is the favourable choice, the best
3 choice as well for a fisheries biologist in terms of
4 minimizing our concerns with water crossings and its
5 impact on spawning areas.

6 Of course, our first choice is to avoid
7 crossing anywhere there is near a spawning area, but if
8 this is the only logical place to do it in terms of
9 going across, then in many cases we would prefer to
10 have a bridge.

11 We have clean, you know, bedrock
12 footings, you have very little need for fill, there is
13 less chance of erosion because you have got firm gravel
14 footings or bedrock, it is normally a narrower area
15 here where the rapids are located, and you won't be
16 impacting on the spawning area because you have got a
17 bridge that goes completely across it.

18 If you chose an area that's upstream, for
19 example, (c), and away from the spawning area, you have
20 always got a risk of when you put a lot of fill in here
21 for a culvert of having some erosion occurring and
22 sediment going downstream and being trapped and ending
23 up in these rapids.

24 You may get fast water going through the
25 top and there is some flow going through the rocks, but

1 it is less flow going through the rocks where the eggs
2 are spawned and certainly to the edges, and you will
3 get sediment settling out there and affecting that
4 spawning area.

5 Downstream, if you chose location (a)
6 here, you again have got to think about fish moving
7 through a pipe culvert which is not the preferred
8 choice for fish biologists for fish migration, and so
9 you have got to think about that concern if you have a
10 pipe culvert downstream.

11 And, again, these choices of culverts
12 here and here (indicating), again, we are talking about
13 the kind of examples Mr. Adamson said, that it is a
14 poor location for bridges where you are having soft
15 banks and it is ideal situation for putting a culvert
16 in because you have got soft substrates and so on.

17 So in terms of the kind of discussion and
18 looking at locations, in many cases choosing the bridge
19 location from a fisheries point of view makes good
20 engineering sense, it makes good environmental sense
21 too. And we avoid the situation of having an upstream
22 culvert that might cause erosion and affecting the
23 spawning and the downstream of putting a culvert in
24 place that may block upstream fish migration.

25 Now, some of the -- just briefly some of

1 the mitigation things that we talk about and Mr.
2 Adamson will go into a little bit more detail.

3 Q. This is photo No. 22?

4 A. 22.

5 Q. I have to get my own in, Mr. Ward, or
6 I am going to owe you a fortune.

7 A. Yes. This is a narrow -- a
8 right-of-way, sort of a main message that we try to
9 give to the industry, if you don't have to cut all
10 those trees down, leave them there to build your water
11 crossing.

12 And here is a shot that I took last year
13 in Kenora District when we were getting a message out
14 to the industry. They had built -- and it is kind of
15 hard to see in the light here, but you can see that the
16 right-of-way is fairly wider here which is sort of a
17 standard right-of-way width, I think about 120 feet or
18 so.

19 Q. And that's in the background of the
20 photograph?

21 A. And that's in the background of the
22 slide, and then as it comes down to the water area here
23 where they are going to have to cross, you can see the
24 vegetation narrowing in on both sides, and it's all in
25 tact right here. And when they come to actually

1 install the structure, they only need to take some of
2 these trees out to -- actually for the roadbed or maybe
3 some more to get machinery in.

4 But that's the kind of message that Mr.
5 Adamson I know has been giving in terms of water
6 crossing workshops to road builders. And what I try to
7 reinforce from an environmental point of view, this is
8 good common sense and prevents erosion -- or minimizes
9 the erosion and the effect of sediment on the aquatic
10 environment.

11 Another example of what vegetation can
12 do. This is slide 24 -- or 23 on the Wapegeise River
13 in Dryden District taken in 1983 where we have one side
14 of the bridge structure, the ditch, we have vegetation
15 in tact and we basically have very little erosion
16 occurring here.

17 It's -- everything seems to be fairly
18 stable even though we have the -- you can't see it, but
19 the ditch, the background here would be going off into
20 the bush and not running down straight through into
21 the creek.

22 Of course on the other side of this
23 crossing, taken at the same time, 1983, we have got the
24 ditch and we have got erosion and you can see a fan of
25 sediment coming out here and this can affect the

1 aquatic environment here.

2 I am not too sure whether I was asked
3 whether this white here was foam or ice or -- I didn't
4 take these pictures, so I am not too sure what that is
5 there. But this illustrates, again, that if you don't
6 have the vegetation, leave some vegetation here, you
7 are going to have this kind of erosion occurring.

8 Q. And that's photo No. 25, I believe --
9 no, I beg your pardon, 24?

10 A. 24, right. The next slide is 25
11 entitled: Fish Migration. This is -- I guess the main
12 fish migrations that we are concerned with are spawning
13 migrations.

14 This is Cedar Creek in Dryden District
15 and this is actually taken, the time of year, in the
16 spring. This is the kind of flow that we see occurring
17 that -- and the kind of area that walleye like to spawn
18 in. Actually, this area is full of walleye spawning on
19 Cedar Creek and this is the time of year that we were
20 concerned with fish migrations in the spring.

21 There is also fall migrations for some
22 species of fish like white fish, they spawn in the
23 fall. So we are looking at flows, and that kind of
24 conditions as well for white fish would be the fall
25 condition. But the main ones we are concerned with

1 with with walleye, of course, are the spring
2 migrations.

3 Some of the problems with culverts, with
4 migrations. If you have a perched culvert you are not
5 going to assist fish migration here and this is just a
6 slide that illustrates what I am talking about when I
7 mentioned the term perched culvert. And this is slide
8 No. 26.

9 Slide No. 27 is a diagram that
10 illustrates that fish may have trouble passing through
11 a culvert based on the length of the culvert. In other
12 words, this is a swimming distance of a certain species
13 of fish, can only go so far because the culvert is so
14 long and/or the water velocity is so great that going
15 through this culvert that fish cannot possibly make it
16 up through a culvert.

17 And the next slide --

18 Q. Mr. Ward, just before you leave that
19 one, could you explain why the length of the culvert
20 might affect the fish's ability to pass through it?

21 A. Well, basically the fish has to
22 expend a lot of energy to go from resting pools say
23 downstream or where you have boulders downstream where
24 they can rest, to have what they call sort of a fish
25 burst speed in terms of starting to swim and moving

1 against this current and moving through it.

2 And it's not -- it is related to how fast
3 the water is coming against them and how long they have
4 to keep that burst speed up. And various species of
5 fish, which I will show in the next slide, have
6 different capabilities of different, you know, energy
7 levels or burst speeds to be able to migrate through
8 culverts.

9 Q. And how would that be different in
10 the normal -- in the natural environment, the natural
11 streambed?

12 A. Well, in a natural streambed you have
13 got various types of rocks on the bottom, different
14 sized rocks, you've got -- you don't normally have a
15 uniform flow. Like, putting water through a pipe
16 culvert you are going to get a certain sort of -- a
17 relatively uniform flow of water velocity through them,
18 the middle of this culvert. You are going to have some
19 reduction on the sides of it, of a culvert, but in a
20 natural streambed you are going to have much greater
21 variety or different water velocities.

22 As you get certain kinds of larger rocks,
23 the waterflow is lower behind it, steeper maybe along
24 the -- or faster along the sides and so on.

25 So in terms of a natural substrate, you

1 have got more areas where fish can swim and choose sort
2 of lower velocity water by moving sort of from larger
3 rock to larger rock and, therefore, move up through
4 rapids and get into the best spawning areas for them;
5 whereas a culvert takes away that kind of thing, gives
6 for a more uniform type of water velocity throughout it
7 in substrate type, but we will mention, there are some
8 ways of mitigating that which is mentioned in the road
9 guidelines as well.

10 This next figure, 28. No. 28, is a
11 diagram that's called Figure A in the road guidelines
12 on page 55 of the Environmental Guidelines for Access
13 Roads and Water Crossings, and it is the Maximum Flow
14 Velocities of Ontario Fish Species, sort of our main
15 migratory species.

16 I want to point out some of the
17 differences. For example, a rainbow trout here which
18 has a much greater resistance than, for example, the
19 northern pike, the light green here, which is what this
20 slide or this curve here shows. (indicating) For
21 example, if you had a culvert length which is swimming
22 distance on the bottom, how far would the fish have to
23 swim to get to this access.

24 For example, say you have a 30-metre
25 length of culvert that fish have to swim through, you

1 are looking at a northern pike and, in this case, in
2 the green line, not being able to handle much more than
3 say .8 of a metre per second, which is the water
4 velocity on this access, to handle that to be able to
5 go through it, I would talk to the regional engineer.

6 But if I wanted to have fish migrate
7 through a culvert and I was wanting northern pike to
8 migrate in the spawning for each -- say, an upstream
9 wetland area which is known as a pike spawning area, we
10 would want to design a structure that didn't have the
11 water velocity exceed the .8 metres per second at the
12 time that we want these fish to migrate.

13 Again, with rainbow trout, again we are
14 looking at something like a 1.5 metre velocity
15 migrating through that water crossing structure and
16 this not only applies for culverts but also for
17 bridges.

18 As Mr. Adamson indicated in his evidence,
19 in some cases there is a narrowing of rivers with the
20 abutments of placing bridges, and that increases the
21 water velocity. Some ways you can mitigate that by, as
22 he mentioned I think in one example, of deepening the
23 channel. But, again, these are the kinds of things we
24 would discuss with the engineer and that's why -- the
25 reason why this figure is included in the guidelines

1 document that we have presented to the Board here.

2 This is figure -- or slide 29. Just the
3 point I want to make about shallow depths entitled:
4 Shallow Depth During Minimal Flows. I have talked
5 mainly about migration routes or migration concerns,
6 fish migration concerns with spawning areas.

7 I'm to spawning areas -- spawning
8 migrations, but as well there may be times of year, for
9 example, we want to allow fish migration for fish to
10 say access feeding areas or go to over wintering areas.
11 They may want to move at times of year when they are
12 not actually spawning, and you may want smaller fish,
13 immature fish like yearlings to move up and down a
14 stream, or whatever, a river situation.

15 So it's important to have culverts
16 properly installed in these situations where you want
17 the fish migration during the summer months, low flow
18 periods to enable fish to migrate for other purposes
19 besides just spawning.

20 The next slide is titled: Mitigation --
21 slide No. 30, Mitigation of Potential Impacts of Water
22 Crossings on Fish Migration, or How to Let Fish Pass.
23 And I will just go through some examples of ways of
24 doing this.

25 Of course, our first choice, if we are

1 talking about a fish migration route, this is slide 31,
2 a photo of the log bridge that Mr. Adamson showed
3 earlier in Red Lake District. We prefer, you know,
4 bridges if it's fish migration route that leaves the
5 natural streambed intact to allow fish to migrate up
6 and down stream in this situation.

7 Or, as Mr. Martel pointed out, or was
8 asking about arch culverts. Again, they leave a
9 natural streambed intact and, in this case, if you
10 have got bedrock solid footings to put your arch
11 culvert, this may be a good alternative to a bridge in
12 some cases. But, again, this is the kind of thing you
13 can discuss with your engineer in terms of your water
14 crossing structure.

15 Again, you know, in terms of -- this is a
16 major fish migration route, which this one was because
17 there are spawning areas right up which you can see
18 rapids in the background here. The fish, we want to
19 have them access to that area.

20 Q. That is photo or slide No. 32?

21 A. No. 32, right. No. 33 is just a
22 diagram that is similar to the one that is in the
23 guidelines and in this one I have sort of summarized
24 on this slide some of the major factors that, in terms
25 of culvert installation, that I am looking for in terms

1 of a fisheries biologist to allow fish migration if we
2 are putting a pipe culvert in place.

3 The first thing here is, it should have
4 about 10 per cent of the pipe diameter below the grade;
5 that is, below the sort of natural stream bottom. This
6 will allow -- most cases with culverts, to allow 20
7 centimetres or 8 inches of water in the culvert for
8 fish migration. If you have about 8 centimetres -- or
9 20 centimetres of water there, most fish species can
10 migrate through there providing the water velocities
11 aren't too great.

12 But If you are talking migrations in the
13 summertime, the flows aren't that high, then the fish
14 should be able to move.

15 The barrel slopes, that is the actual
16 slope of the pipe, should be kept as close to the
17 natural gradient as possible so you don't get this end,
18 say, sticking up in the air and this end dropping down
19 too low. Try and follow the natural streambed slope
20 here and, in actual fact, if culverts exceed more than
21 a five per cent slope, it's very difficult for fish to
22 move through here and you may need structures such as
23 baffles that we talked about in the road guidelines
24 installed to enable fish to migrate upstream,

25 Again, in some cases, if you have

1 erodible type material downstream you may have to rip
2 rap this area trying to get different size rocks in
3 place. It allows fish to come up and rest against some
4 of these larger rocks as well as prevent scouring from
5 occurring which would create a pool and maybe a falls
6 or a dropoff below the end of the culvert here, which
7 would be a barrier for fish to try and move up through
8 into the culvert.

9 Q. Mr. Ward, could you explain what you
10 mean by securing?

11 A. Well, basically it's sort of digging
12 out with the water velocity the lose -- the erodible
13 sediment that is below the culvert there and by
14 armouring that area or by laying rip rap, you can
15 prevent that from occurring.

16 In some cases, this is good from an
17 engineering point of view as well as making good sense
18 from an environmental point of view as well.

19 Q. And you also indicated that this
20 diagram is similar to one which is in the Environmental
21 Guidelines for Access Roads and Water Crossings. I
22 believe it's the one at page 34; is that correct?

23 A. Let me just check.

24 A. Yeah, 34 is the one that I had the
25 artist copy that one and I added a few more points in

1 terms of some of the fish migration concerns.

2 Q. Thank you.

3 A. And also there is a diagram on page
4 30 in the road guidelines too that has the point that
5 culvert size for normal flows and fish passage as well,
6 so there's sort of the two diagrams in the guidelines.

7 The next slide No. 34 is the Confusion
8 River in the English River Road in Kenora District.
9 It's a culvert placed -- actually it looks like an
10 arch culvert, but there is actually a pipe culvert that
11 is joined below.

12 I showed this slide to illustrate the
13 technique that we can use with some of these kinds of
14 culverts to allow for fish migration. Inside this
15 culvert we have added rock. It was set to start with
16 below the natural substraat, so -- this is in the
17 summertime, there is even some water there in the low
18 flow period. And there --

19 Q. This is slide 35?

20 A. Slide No. 35, right. Where there are
21 rocks placed here and allows fish to migrate and sort
22 of simulates the natural stream conditions that occur
23 below and above this crossing structure.

24 So there are -- those kinds of techniques
25 can enable fish migration as well. And as you see,

1 it's a fairly wide culvert here in the bottom and there
2 is a fair bit of room for fish to move through.

3 Slilde No. 36 is the kind of -- or a
4 slide to illustrate that we can have multiple barrel
5 culverts installed, especially in low shallow streams
6 that are fairly wide, you can maybe put two or three or
7 whatever depending on the width of the crossing
8 structure.

9 And, again, there is enough water here
10 and should be able to allow fish migration through
11 here. So that maybe a technique as well to use to
12 enable -- or mitigate fish migration problems.

13 Q. Mr. Adamson, just on that point, what
14 would be the reason for putting two culverts there
15 rather than one larger one?

16 MR. ADAMSON: A. This -- is that on?

17 Q. I think so, yes.

18 A. This particular crossing is Trewartha
19 Creek and it's the one that replaced that bridge that
20 fell down that I showed yesterday with all the fill in
21 the river.

22 These culverts are two 11-foot diameter
23 pipes and for an equivalent single pipe would probably
24 be in the order of 15, 16-foot diameter which is a very
25 large structure, it's much more difficult to install,

1 it also means that the road would have to be much
2 higher.

3 So for reasons of installation and to
4 keep the road fill down and also to avoid backing up
5 the water too much, two pipes were preferred over one
6 here.

7 Q. And could a very large culvert like
8 that which would, as you indicated, raise the level of
9 the road at that point of the crossing, could that be a
10 safety concern as well for those people using the road?

11 A. Not necessarily. The road would be
12 ramped up at a suitable grade over it.

13 MRS. KOVEN: Mr. Adamson?

14 MR. ADAMSON: Yes.

15 MRS. KOVEN: You mentioned earlier in the
16 two regions last year that you had replaced 50 water
17 crossings.

18 MR. ADAMSON: We dealt with 50. Some
19 were removed, some were replaced.

20 MRS. KOVEN: Some were replaced. Does
21 that include culverts as well as bridges?

22 MR. ADAMSON: It was bridges that we were
23 dealing with, but quite often we can replace a bridge
24 with a culvert, like this example, but it was 50
25 bridges that we dealt with.

1 MS. BLASTORAH: Q. And would you have
2 replaced any culverts over and above that in those two
3 regions. Are you aware of that?

4 MR. ADAMSON: A. Culvert replacements
5 occur, but I don't have any statistics on numbers.

6 Q. Thank you.

7 MR. WARD: A. Okay. The next slide is
8 just a series of slides on about Golden Creek which is
9 a tributary of Red Lake in Red Lake District.

10 Q. This is slide No. 37.

11 A. Slide No. 37. And it illustrates
12 here a washout. They had three pipes - I'm not too
13 sure what diameter they were - that weren't adequate
14 for the water flow here, it wasn't designed by an
15 engineer.

16 And one of the pipes, which is slide No.
17 38, indicates that this pipe, one of them -- you know,
18 you get a fair bit of water below it, move that pipe
19 downstream and also with it a lot of sediment went
20 downstream. And just around this bend in the corner is
21 a walleye spawning area for Red Lake.

22 Q. Mr. Ward, do you know what time the
23 original installation of that construction was, what
24 year?

25 A. I'm not sure when it first went in,

1 but these slides were taken in 1982 and I think that it
2 was only within a year or two that these structures
3 were in place before that.

4 Q. So it would have been the early 80s
5 then?

6 A. Probably, yes.

7 And in 1984 we had the ability to get
8 some crews in here to clean up the spawning area, to
9 try and move that sediment that came from that washout
10 from these areas with fire hoses. And using high
11 pressure you can actually generate a fair bit of
12 velocity here right into the -- and move sediment
13 right out of the interstitial spaces here and clean
14 these rocks.

15 It's not just good enough to clean the
16 surface of the rocks, you have got to get right in
17 there and generate quite a bit of velocity here and
18 clean out and actually move the armour layer of the
19 rocks here and get the sediment moving out downstream.

20 So this is, I believe, a slide that I
21 have in my evidence as well at page 309 of the evidence
22 slide No. 22. So this was slide 39 here.

23 The slide No. 40 is a picture of the
24 fisheries management officer in Red Lake District, Don
25 Bush who has been in Red Lake for the last 20 years,

1 and he's the supervisor of this group.

2 We have senior fisheries technicians in
3 districts like Red Lake that have quite a bit of
4 knowledge about fish habitat and he has been involved
5 with several fisheries habitat rehabilitation projects
6 here in Red Lake.

7 And you can see that the shot of the
8 sediment here moving out and there is some current of
9 course moving through here with the flow and he moved
10 the sediment and cleaned these rocks out.

11 Q. Mr. Ward, you indicated this
12 gentlemen is a fisheries technician; is that correct?

13 A. Yeah, he's a senior technician, yes.

14 Q. Would he necessarily be a biologist,
15 a fisheries biologist?

16 A. No. He's a graduate of a technical
17 school and then to become a senior technician normally
18 you have to be a technician probably for at least six,
19 seven, maybe ten years working in the Ministry before
20 those positions would become available to you.

21 Q. And from the fisheries side, would he
22 be then the equivalent of Mr. Iskra on the forest
23 management side; that kind of a technician?

24 A. I'm not sure what -- I believe so.
25 I'm not sure what Mr. Iskra's position is with the

1 Ministry. I know he's -- I don't know whether he's a
2 senior technician. If he is, that would be equivalent,
3 right.

4 Q. Thank you.

5 A. And this is slide 41. Again just
6 indicating that we are doing sort of a couple of jobs
7 here. When we are doing some habitat rehabilitation,
8 not only are we cleaning the existing bed and moving
9 any sediment out, but we are also adding rocks to
10 enhance some of the spawning areas by putting rocks
11 along the margins where walleye have -- prefer to
12 normally spawn.

13 They normally try to avoid the main
14 centre of a rapids where the flow is strongest, partly
15 because they produce such small eggs that if they
16 spawned -- and they are broadcast spawn again, the male
17 and female come up -- or the female with a few males
18 and the eggs are just broadcast over the rocks and the
19 sperm is released at the same time and they are
20 fertilized sort of in the water and if there is too
21 strong a flow, they would probably be washed well
22 downstream out of the spawning area.

23 So they like to prefer a certain velocity
24 of water but not excessive. So we try to enhance those
25 kinds of zones of lower flow to the edge.

1 And the next slide 42 indicates the kind
2 of rock that we try to use. This is a gravel pit in
3 Dryden District. You will find this kind of rock
4 available that's been screened. We are looking at
5 rounded rock about 3 to 10 inch in diameter, some time
6 referred to as cobble, and free of any kind of fines or
7 smaller sediment. And we have used this kind of rock
8 here to enhance or increase spawning areas in Dryden
9 District as well.

10 So this picture is a picture of Ray B.
11 Eddy who is a fish habitat specialist with fisheries
12 branch in Toronto was up on one of his field visits
13 with me and touring parts of -- areas that we looked at
14 rehabilitation in the northwest region.

15 Slide No. 43 is a shot of Kilbert Creek
16 in Kenora District. I wanted to illustrate -- or in my
17 talk with the fact that -- the last point that I wanted
18 to make with my main message, that you can use some
19 water crossing structures to actually enhance or
20 increase spawning areas or critical habitat for fish.

21 In this case this was a bridge which,
22 with the abutments, it narrowed the slow moving river a
23 certain amount. It runs into Dogtooth Lake in Kenora
24 District and walleye -- we are trying to rehabilitate
25 the walleye population in Dogtooth Lake and one of the

1 areas we thought we could do was increase the spawning
2 area for them.

3 And because we have narrowed the water
4 here, we have increased the water velocity and
5 increased sort of a current which is one of the factors
6 that fish queue on, walleye in particular queue on to
7 find spawning areas. They have got to have that flow
8 or a current there.

9 And by placing rocks which you can see
10 here in the foreground, and we got these rocks and
11 dropped them off the water crossing structure and sort
12 of added on the sides and across the stream bottom, we
13 actually developed a spawning area that didn't occur
14 before.

15 And this next slide, the last one I am
16 going to show of Kilbert Creek is just the view of this
17 spawning area downstream and you can see the rocks
18 placed right across from one side to the other and we
19 tried to expand them a little bit on the margins a
20 little bit further on both sides here and we know that
21 walleye have used these areas for spawning because this
22 was done in -- these pictures were taken in 1985. In
23 subsequent springs we have seen walleye back in here
24 spawning, utilizing these areas.

25 So they have been actually attracted to

1 an area that we have created and we have used here a
2 water crossing structure to help us do that because it
3 narrows the river and creates that velocity that
4 attracts the fish to that site.

5 Q. And that is --

6 A. My last slide, No. 44.

7 MR. FREIDIN: Mr. Chairman, my record
8 indicates that Mr. Ward's ha earned out of a a maximum
9 of \$33, \$22.

10 MR. WARD: That is at least dinner
11 tonight, Ms. Blastorah.

12 MS. BLASTORAH: I think I already
13 promised you dinner though.

14 MR. WARD: That's right.

15 MS. BLASTORAH: Q. Okay. Mr. Ward, just
16 before we leave your presentation then, I would like to
17 ask you one question.

18 In your opinion, will the application of
19 the guidelines, the Environmental Guidelines for Access
20 Roads and Water Crossings prevent and mitigate --
21 adequately prevent and mitigate the sorts of negative
22 environmental effects you have shown in your slide
23 presentation?

24 MR. WARD: A. Yes, I believe it will,
25 yeah.

1 Q. Thank you.

2 MS. BLASTORAH: Mr. Chairman, those are
3 my questions for Mr. Ward.

4 THE CHAIRMAN: Thank you.

5 MS. BLASTORAH: And I would just like to
6 point out we will be making hard copies of those
7 photographs available to both the Board and photocopies
8 to the parties. We weren't able to get those done in
9 time for today.

10 We are going to turn now back to Mr.
11 Adamson who is going to address how some of the
12 mitigating techniques outlined in the environmental
13 guidelines can address the sorts of concerns raised by
14 Mr. Ward. And I anticipate we won't have any trouble
15 finishing that by the 12:45 break.

16 THE CHAIRMAN: Thank you.

17 MS. BLASTORAH: Q. Mr. Adamson, I
18 understand you have also been an instructor at training
19 workshops on the subject of how improved design and
20 construction practices can minimize potential harm of
21 access construction to the environment?

22 MR. ADAMSON: A. Yes, that's right. I
23 have been preaching these messages for a few years now.

24 Q. And I understand that you would like
25 to use some slides to demonstrate to the Board some of

1 the more interesting aspects of how that is done and
2 how successful or how the guidelines can be utilized to
3 achieve that objective.

4 A. Yes, that's right. Like Mr. Ward, I
5 put together slides over the years and used them on our
6 training programs and I thought it would be interesting
7 for the Board to see the sort of package of where we
8 are coming from and where we are going with the new
9 groundrules.

10 MS. BLASTORAH: Mr. Chairman, are you
11 able to hear Mr. Adamson all right?

12 THE CHAIRMAN: Yes, we can, but if you
13 can speak up, I think it would be helpful.

14 MR. ADAMSON: All right. The first slide
15 here is, it just shows a series of lakes. And the
16 natural terrain features of northern Ontario mean that
17 to build a road from one point to another means that it
18 has to cross waterway somewhere. And we recognize that
19 the water crossings have one of the most significant
20 impacts on the environment and my talk today is going
21 to concentrate on water crossings.

22 MS. BLASTORAH: And, Mr. Chairman, I
23 would point out that again these photographs are listed
24 on Exhibit 698, this time starting at page 3 of that
25 exhibit and we will be going through them in order.

1 THE CHAIRMAN: Thank you.

2 MR. ADAMSON: The second slide
3 illustrates that an improper water opening size can
4 lead to washout like this one here at Horse Creek in
5 Sioux Lookout District that happened during a heavy
6 spring rain in 1985.

7 And, in addition to the environmental
8 concerns of sedimentation as Mr. Ward indicated, such a
9 washout can cause a disruption to traffic like the
10 driver of this pick-up truck found out and it can also
11 been very costly to repair.

12 Quite often the cost to come back in
13 later and repair a washout exceeds the original cost of
14 the crossing because it's unexpected, it's done on an
15 emergency basis and it's really a re-doubling of the
16 effort.

17 So we try to avoid washouts for several
18 good reasons.

19 MS. BLASTORAH: Q. This is photo No. 3
20 on the list?

21 MR. ADAMSON: A. Photo No. 3 now, yes.
22 Even if the opening size is large enough, sometimes
23 improper construction practices can lead to failure as
24 well. In this photo here the fill that was used around
25 the pipe is uniformly graded sand, we call it blow

1 sand, but under the action of high flow velocities
2 around the inlet of the pipe, it's quite erodible and
3 you can see where it's eroded back in there.

4 So the size may be adequate but without
5 good erosion protection that culvert could fail.

6 Q. Mr. Adamson, you indicated that was
7 evenly graded sand. What do you mean by evenly graded?

8 A. It means the particle sizes are about
9 the same size, like sugar. It tends to erode -- the
10 other expressing or the opposite would be a well-graded
11 material with main different particle sizes and that
12 would be erosion resistant.

13 Q. Thank you.

14 A. Photo No. 3 is --

15 Q. I think this is No. 4.

16 A. Or photo No. 4, sorry. This is a
17 road fill that is very steep due to the short pipe and
18 that steep slope has led to this gully erosion, the
19 soil is not stable under water flowing over it, and
20 the water comes from the road surface over here on the
21 left and it comes down the road and where it finds its
22 path down the slope, it had eroded this gully.

23 Q. I believe that is the same slide as
24 Mr. Ward showed as No. 8 in his presentation. Is
25 that -- not the same slide, but the same crossing?

1 A. Same view, or same crossing, yes.

2 Q. Thank you.

3 A. It's on Corrigan Township Road. In
4 this particular case, remedial action was taken here
5 and the culvert pipe was lengthened so that the slope
6 could stand at a stable angle. Again, the cost to come
7 back in and fix it at this point in time can prove
8 quite expensive.

9 Q. Mr. Adamson, would knowing -- if you
10 were reviewing that crossing or a proposed crossing,
11 what information would you need to know to determine
12 whether the culvert were adequate?

13 A. The length of pipe needed is a direct
14 function of how high the fill is above it; the higher
15 the fill, the longer the pipe that is needed.

16 So now we are asking people that are
17 proposing water crossings to indicate the fill height
18 or alternatively we give them a formula with which they
19 have to size the length of the pipe to match the fill.

20 Q. And do you know whether that is
21 indicated on the multi-use work permit application that
22 was filed during Mr. Tenaglia's evidence, whether the
23 culvert length is indicated there?

24 A. Yes, it is. The three components
25 that we review in culverts on that new application are

1 the culvert diameter, the fill heighth and the culvert
2 length. So with those three key parameters we should
3 be able to control a lot of the problems that we've had
4 in the past.

5 Q. Thank you.

6 A. This is slide No. 5 and it shows the
7 White Sand River near Armstrog which was built in 1975.
8 And that was the first year that I was with the
9 Ministry in this job.

10 And what it illustrates here is large
11 areas of soil that have been exposed beside the river.
12 There is quite a bit of sediment in the water crossing,
13 it's not very obvious in this photo, but you can
14 believe me that there was quite a bit of sediment
15 there.

16 So we felt at that time that this was a
17 good water crossing, it passed the water, the size of
18 the pipes was right, the length was right, there was
19 erosion protection to protect the structure. Since
20 that time though there has been an increased awareness
21 and knowledge about the potential impacts of
22 sedimentation on fisheries habitat and water quality.

23 I met Mr. Ward and another biologist who
24 told me that this sort of thing isn't the way we should
25 be doing it. So there definitely is a change in

1 awareness and a change in our attitude towards these
2 structures.

3 Q. Would that kind of structure be
4 acceptable under the new or Environmental Guidelines
5 for Access Roads and Water Crossings?

6 A. The structure itself would in terms
7 of the pines here, but the way and the construction
8 practices that were followed to build it would not be
9 acceptable because it's a mandatory standard now to
10 leave vegetation in place unless absolutely essential.

11 So if we came upon this area now, I would
12 certainly ask the question: Why was this all cleared
13 and that is leading to unnecessary erosion and steps
14 may be taken to protect that area from erosion.

15 Q. Thank you.

16 A. This is slide No. 6 and it shows the
17 cover on the guidelines and basically the point here is
18 that standards now have been established and direction
19 has been provided to field staff to ensure that
20 consistently good water crossings are constructed in
21 the future and the key word is consistently.

22 Q. And when you say standards, do you
23 mean the sort of geometric standards we heard about
24 earlier?

25 A. No, I mean the mandatory standards to

1 ensure that unnecessary impacts are eliminated.

2 Q. Thank you.

3 A. This is slide No. 7 and it's at
4 Exhibit 696N in the handouts that were given yesterday.
5 It's a text slide, so it's not with the photos, it's
6 with the overheads.

7 This summarizes the mandatory standards
8 that are contained in the guidelines for water
9 crossings. I will just briefly run through them.

10 The first one is that all water crossings
11 are now reviewed under Lakes and Rivers Improvement Act
12 so the Ministry checks the sizes of the structures and
13 approves them.

14 There won't be any water operations
15 during the spawning incubation periods and that has
16 been in place for many years, that is generally in the
17 springtime. No blockage to impede fish or water
18 movement. Minimal removal of vegetation, protect the
19 vegetation that is there. Try to use granular
20 erosion-resistant fill in the flood plane to get away
21 from that blowsand material if at all possible. Grade
22 the slopes to a stable angle so that stable angle can
23 then have a good chance of revegetating. Erosion,
24 sediment and contaminant control measures are to be
25 implemented where they are needed.

1 Q. What do you mean by contaminant
2 control?

3 A. There is a mandatory standard in
4 there controlling the use of things like lumber and
5 nails, boards, sort of water pollution things that may
6 occur, paint preservatives, just good tidy housekeeping
7 in working around the river.

8 The last item is other site-specific
9 measured required by MNR and, as I explained yesterday,
10 the way the guidelines are set up, if these aren't
11 enough to mitigate the impacts, the ministry can add on
12 other specific measures and make them mandatory for a
13 particular site.

14 This is slide No. 8, and a change in the
15 old practices may be necessary to comply with the new
16 standards. And many people contribute to doing a
17 proper job right down to the individual equipment
18 operator, that is the fellow who has control over
19 whether the stripping occurs or not.

20 And the Ministry and the forest industry
21 have begun staff training, both formal workshops and
22 also on a site-specific basis. And what is depicted in
23 this slide is some instruction being given to the
24 equipment operator, and that is the type of training
25 and change in attitude that is going to take place.

1 Q. And I take it that is during an
2 actual installation--

3 A. That would be -- you could assume
4 that.

5 Q. --or actual construction?

6 A. I don't know. I didn't take the
7 picture, illustrates a point.

8 I would like to illustrate the good
9 practices that are set out and how we hope that the
10 guidelines are going to be implemented.

11 This is slide No. 9, and it shows the
12 approaches to a river and where the dot is pointed
13 there is the river, that is English River in Kenora
14 District and vegetation is nature's erosion control
15 method. Protect it and sediment will be minimized.
16 So this is the time to start protecting water quality.
17 And the guidelines require that a narrow clearing width
18 be used within a hundred metres of the crossing.

19 Q. If you could just back up to that one
20 for a minute. Could you just show in that slide some
21 of the things that you mean by preserving vegetation,
22 could you just point out a few things?

23 A. Well, in this case there is a
24 clearance centre line there that was cleared for survey
25 purposes, but all the rest of the trees were left in

1 tact within that hundred metre zone.

2 This is slide No. 10 and it depicts the
3 approach to Cedar Creek in Terrace Bay District near
4 Hemlo. You can't see the creek very well, but it
5 starts at this side and flows over here, in that area.
6 (indicating)

7 Q. Transversely across about the middle
8 of the photograph to the right?

9 A. Yes, from left to right, about the
10 middle of the photograph. The right-of-way clearing
11 has been done, but the low ground cover has not been
12 stripped away, so the mineral soil underneath has been
13 protected. And the soil in this particular area is
14 similar to the slide I showed earlier of the Pic River
15 area, it is quite erodible and leaving that material
16 there is really going to help to reduce the impacts
17 here.

18 Q. From a construction standpoint, is
19 there any problem with leaving that there?

20 A. There will have to be some
21 disturbance when the road is built, but what we are
22 encouraging and requiring, in fact, is that that
23 disturbance be kept to an absolute minimum necessary to
24 build the acrossing.

25 Slide No. 11 shows a small culvert being

1 installed by a backhoe and it's installed right into
2 the creek. The way the impacts of this are mitigated
3 is to try and do it at the driest time of the year and
4 try to do the work quickly to reduce the duration of
5 the impact. There is not enough flow and water volume
6 to get involved with a diversion of the flow, so this
7 is what we would call a wet installation.

8 Photo No. 12 shows a little larger creek
9 and it depicts where the water has been diverted into a
10 temporary channel away from the work area. And this
11 water diversion reduces the amount of turbidity that's
12 going to occur during construction of the culvert, it
13 also ensures that that culvert can be installed
14 properly. They have good construction conditions
15 within which to work. This is very important on large
16 pipes because without adequate compaction they can fail
17 structurally.

18 Photo No. 13 is the same creek. It is
19 Maskarine Creek in Sioux Lookout District. It is the
20 same site during preparation of that temporary
21 diversion channel. And the point I would like to
22 illustrate here is that there will be impacts, some
23 impacts are unavoidable. Even in building that
24 diversion there is going to be a bit of turbidity. We
25 try to keep the duration as short as possible and

1 minimize the harm that's caused by those short-term
2 impacts.

3 Q. Mr. Adamson, roughly -- or could you
4 give me an estimate of how long it would take to
5 construct that diversion channel?

6 A. Oh, that would be just a matter of an
7 hour or two.

8 Q. And would the -- when you say the
9 duration of this kind of turbidity would be short term,
10 do you have any idea how long that would last?

11 A. Well, about that same order of
12 frequency, maybe an hour or so longer. The total --
13 although the water looks very muddy here, the total
14 volume of sediment that's moved in that short period of
15 time wouldn't be great.

16 This slide shows the completed
17 installation, it is No. 14, of Maskarine Creek, and it
18 illustrates several of the good practices that we like
19 and Mr. Ward likes. It has got the proper culvert
20 diameter for floods, it has got a good length so that
21 these slopes can be stable, it has some erosion
22 protection around the inlet to resist high flow
23 velocities, it is in solid and correct elevation so
24 that there is always going to be a depth of water in
25 the pipe.

1 And in the background here, which is not
2 too clear, is application of slash debris. It is this
3 brush barrier material that is recommended in the
4 guidelines and that's installed to prevent erosion and
5 also to trap sediment.

6 Q. And could you just describe for the
7 record where that is shown in the photograph?

8 A. It is shown just below the road
9 surface.

10 Q. And above the level of the culvert?

11 A. Above the rip rap and above the
12 culvert, yes.

13 Q. Do you have any idea what time of the
14 year this photograph would have been taken?

15 A. It has got the date right in the
16 corner there, September 21st, 1988.

17 Q. So how would those flows -- would
18 that be an average level of water, or would that be or
19 low or high?

20 A. That would be summer levels I would
21 think.

22 Q. Thank you.

23 A. It is designed to pass the 25-year
24 flood and at the 25-year flood the water would be up
25 near the top of that pipe.

1 Q. And do you anticipate that that would
2 happen very frequently?

3 A. Not frequently, no.

4 This is slide No. 15 and I took it on the
5 same date, at a different location. There is a couple
6 of things I would like to illustrate here.

7 First, is the ditch here. (indicating)
8 In the foreground is a water crossing, another water
9 crossing. So this is the approach coming down a hill
10 towards a water crossing, and the runoff from this cut
11 area and coming down the hill has been diverted into
12 the bush.

13 This is a mitigation technique that is
14 recommended, it doesn't cost much money, but that way
15 any sediment in the water will be filtered through the
16 low vegetation in the forest floor.

17 The right-of-way here has been narrowed.
18 You can see in the background how wide the right-of-way
19 is there between the tree lines, and then in this area,
20 which is within that hundred metres of the crossing,
21 the right-of-way has been narrowed and that fill
22 actually goes right down into the trees.

23 This material here is slash debris.
24 (indicating) It is limbs and sticks and tops and
25 things, it's left over from clearing the right-of-way

1 and it is a good technique for bush roads. The
2 material is sort of spread around and then it's pushed
3 in with a backhoe bucket or with the tracks of a
4 machine. And it is a readily available material, it is
5 right on the site anyway, it contains organic matter
6 which is going to encourage revegetation, it will slow
7 down the runoff velocity, therefore, reduce erosion and
8 also any turbid water that flows over or through it
9 will tend to filter out the sediment.

10 Another advantage of this material is
11 that the seeds that are blowing around in the air or
12 that might be spread around purposely, they will tend
13 to grab in there and there is a better chance that that
14 slope will revegetate as compared to exposed mineral
15 soil.

16 We hit on this technique when we were
17 doing our research for the environmental guidelines,
18 and it has been studied in some detail in Utah by the
19 U.S. Forestry Service and it is also used in Alberta,
20 and we think it is a good economical method to use in
21 the bush for this purpose.

22 Q. Just before you go on, Mr. Adamson, I
23 would like to go back to your point about the 20 --
24 designing that culvert for the 25-year flood.

25 A. Yes.

1 Q. In doing that, do you anticipate --
2 well, I asked you: Would that happen very frequently.
3 Do you an anticipate that that would normally happen
4 within the 25-year period?

5 A. No, the term 25-year flood is a
6 statistical expression, it all depends on probability.
7 I am not an expert in statistics, but I am told that it
8 has a 60 per cent change of occurring in any 25-year
9 period.

10 What I do know for a fact is that the
11 culverts that we have sized on that basis and for the
12 10-year flood have been performing very well. We don't
13 see many washouts at all for culverts that are properly
14 sized.

15 Q. And if it were the case that a
16 culvert washed out as a result of a 25-year flood like
17 that, would the velocity of water that would be passing
18 through that washed out opening, would the velocity be
19 different than what you would see normally going
20 through the culvert and, if so, would that have any
21 effect on what would happen to the sediment or any
22 sediment resulting from that washout?

23 A. Oh, most definitely. Maybe I will
24 back up to this slide here, No. 14. At its capacity
25 that pipe would be right full of water and the volume

1 of water going down the creek and through the pipe
2 would be such that the velocity would be very high,
3 probably in the order of five or six feet per minute or
4 two or three metres per second.

5 And in terms of the effects downstream,
6 for one, we want to use erosion-resistant gravel around
7 the pipe, and that's a mandatory standard now. So that
8 that material that does erode is not real fine
9 sediment, it is a little coarser, and that high flow
10 velocity will tend to carry that material further
11 downstream and flush off any cobble areas or spawning
12 beds that it might tend to settle in. It gives a
13 flushing action, much like the fire hoses that Mr. Ward
14 showed.

15 Q. And I think you indicated that the
16 water would be moving at a greater feet per minute
17 velocity. Is that a standard measure of velocity, feet
18 per minute?

19 A. Feet per second, sorry.

20 Q. Thank you.

21 A. This is slide No. 16. It shows the
22 crossing of McFarlane River on the English River Road
23 in Kenora District, we call it the Redditt bypass. It
24 goes around the little Hamlet of Redditt and the
25 flow -- this is a natural channel right here

1 (indicating) and during construction the flow has been
2 diverted over here, there's a temporary channel to the
3 side.

4 Q. So just for the record, the natural
5 flow would pass through where the culvert under
6 construction is indicated on the photograph and the
7 water has been diverted off to the right of the
8 photograph?

9 A. Yes, that's right. It is put into a
10 temporary bypass channel around the work area.

11 Q. Thank you.

12 A. On this project we worked -- I should
13 start out, the alignment of the road here was very
14 constricted by the topography of the area. To the east
15 was high mountains and to the west was a very deep
16 swamp area. So the alignment could really only follow
17 one route, and unfortunately that particular route was
18 directly on top of a spawning area and a spawning area
19 that was -- had been approved by Mr. Ward and his
20 cohorts in Kenora.

21 So when we arrived to build the road
22 across it was recognized immediately as a sensitive
23 site, that special measures had to be taken and the
24 special measures we did was to develop artificial
25 spawning beds using these special cobbles here

1 (indicating) that they use to create the correct
2 opening sizes, interstitial sizes between the rocks.

3 We lined all underneath the culvert and
4 also 50 metres on each end of the culvert to create a
5 fairly lengthy section of the creek that would be
6 suitable. Another thing we did was to clear span the
7 whole creek to ensure that there was no change in water
8 velocity at all.

9 So those two mitigation techniques were
10 put in. It cost us about \$25,000 for these cobbles and
11 that can be compared to the cost of an alternative
12 routing of the road. And I would say by spending
13 \$25,000 to mitigate the impact, we probably saved
14 several hundred thousand dollars on the location of the
15 road. So values that are identified in the planning
16 process are protected by mitigation techniques like
17 these.

18 Slide No. 17 is the Pikitigushi River
19 bridge under construction, and what I want to point out
20 is that I have been showing pictures of culverts up to
21 now. There are certain special measures that are --
22 not special perhaps, but measures that are taken during
23 bridge construction to ensure that the impact is
24 reduced.

25 In this slide, for example, is a

1 temporary log bridge that's been put across the river
2 for access so that equipment isn't driving through the
3 river all the time.

4 This is slide No. 18 and it shows the use
5 of a coffer dam. This gravel fill that's been pushed
6 out into the river is called a coffer dam and it has
7 been built around this area here where the abutment is
8 going to be constructed.

9 In the case of culverts, we can generally
10 divert the flow into a temporary channel away from the
11 work area. Where bridges are going to be built over
12 rivers, it is more commonly -- there is just too much
13 flow and the rivers are too large to divert the whole
14 flow. So what is done is there is a slight
15 encroachment from the side in order to allow
16 construction in dry conditions here.

17 And this project is on the Wolf River
18 near Thunder Bay, just north of Dorion in Thunder Bay
19 District, and it's replacement of that old log bridge
20 in the background.

21 Q. What is the advantage of doing the
22 construction in the dry like that?

23 A. There is two reasons. One is that it
24 avoids -- again, avoids turbidity in the water to
25 separate the construction equipment and operations from

1 the flowing water, and the other advantage is, of
2 course, to build the crib here allows that site to be
3 dewatered and build it under dry conditions.

4 Q. Is that a pump or something indicated
5 in the foreground? I see some hoses there.

6 A. These are pumps that are being used
7 to lower the water in that area.

8 This is slide No. 19. And as with
9 culverts, there is a need for erosion protection work,
10 erosion control works around bridges. What is depicted
11 here, is a backhoe is trimming the slope and placing a
12 rip rap erosion protection on the ditch line going down
13 towards the river.

14 The rip rap material in this case came
15 from a rock cut in the background of the photograph
16 just down the road, so it's ideal. If there happens to
17 be a rock cut in the area, then there is lots of this
18 good material to do the job with.

19 Slide No. 20 shows the completed bridge.
20 It is Atikwa River bridge in the Kenora District and it
21 illustrates the final appearance of that structure.
22 And we try -- at completion of construction the site
23 must be left so there is no on-going erosion, the
24 long-term impacts are eliminated.

25 This is photo No. 21 and I would like to

1 talk a bit about opening size. Quite often the opening
2 size looks large for normal summer flows. These three
3 nine-foot culverts look pretty big when they are first
4 installed, and we get criticized sometimes for going a
5 little overboard on these things.

6 The opening was selected based on
7 engineering methods of trying to predict what the flows
8 will be and sizing a structure to handle those flows
9 during exceptional flood periods.

10 The following spring the water came up -
11 this is the same culvert - and at that time it didn't
12 look too large. This crossing is performing exactly as
13 expected, it's passing very high flows without
14 structural damage or erosion. So it's really
15 application of engineering techniques.

16 The water crossing sizes are selected by
17 the Ministry and the forest industry, and the Ministry
18 reviews all the water crossing proposals to make sure
19 they can pass flood flows.

20 Q. That's slide No. 22, I believe?

21 A. Slide 22, yes. This slide shows a
22 stain mark here right on the culvert at that point. It
23 gives an indication of the flood water levels during
24 the time that the pipe has been installed or in place.

25 And an important component of our work is

1 monitoring performance after installation. For
2 example, last year we conducted a formal review of our
3 methods and there was a total of 165 culverts
4 inspected, ones that we had sized or people had sized,
5 using the methods we recommend, and these have been put
6 in over the last 10 years. So they were physically
7 inspected, we got records of water marks like these to
8 make sure our design methods are working properly.

9 Q. That's slide No. 23?

10 A. Slide No. 23, yes. We don't want to
11 be putting in culverts that are too large,
12 unnecessarily large because of price and we don't want
13 to be putting in culverts that are too small, that can
14 lead to erosion and washout problems.

15 This is slide No. 24 and the message here
16 is good practice also extends into the maintenance
17 phase as well. And it is not evident in the slide, but
18 from where that stick is on the edge of the road, under
19 the road is a culvert and just upstream a beaver has
20 chosen to build his dam and create this pond up here
21 upstream of the road. This is a common occurrence and
22 that debris -- that dam should be removed before it
23 plugs the culvert and can lead to water overtopping the
24 road.

25 A longer term solution -- besides

1 removing the debris, a longer term solution would be to
2 do something about the beaver that's building the dam
3 there.

4 Q. Mr. Hogg, I have a question for you
5 on this slide. The Nishnawbe-Aski Nation and Windigo
6 Tribal Council asked in their statement of issues how
7 inhibition or removal of beaver dams is assessed with
8 regard to native use of beavers. Could you comment on
9 this slide in that context?

10 MR. HOGG: A. Well, the first point I
11 guess I would wish to make would be that, as Mr.
12 Adamson has said, there is no shortage of beaver in the
13 area the undertaking and this problem is really very
14 common, and the fact that these beaver are at roadside,
15 it is often very desirable from the standpoint of the
16 trapper because the animals are accessible. So removal
17 of the dam or removal of the beaver can be of concern
18 to the trapper.

19 Now, this issue of beaver problems is
20 spoken to in Exhibit 683, the environmental guidelines,
21 it's spoken to at page 53 and 54. And when a problem
22 such as this is reported to the Ministry, the routine
23 is that the trapper who has the registered trapline for
24 the area is contacted, and that trapper may be a native
25 or may be a non-native, there isn't any differentiation

1 in that. The registered trapline holder is contacted.

2 Now, if this complaint comes in the
3 spring, and it often does, because what is happening is
4 that young beaver, two-year-old beaver are being forced
5 out of their home colonies and they are looking for a
6 new territory and they, of course, encounter the
7 situation it is an ideal spot to build a dam.

8 The problem is that in spring the pelts
9 of beaver aren't particularly valuable and the trapper
10 is sometimes reluctant to undertake any action to
11 remove it at that time. In some circumstances, in some
12 places the company or municipality or whoever is having
13 the problem may choose to pay the trapper for his
14 services at a rate that roughly equates with what the
15 value of the pelt is. This isn't happening everywhere,
16 but I think that solution is increasingly common.

17 But if that kind of accomodation can't be
18 worked out between the trapper and the company and if
19 the situation warrants it; that is, the Ministry thinks
20 that the road is at high risk, perhaps there is a large
21 amount of water behind the dam, then the company will
22 be given permission to destroy the beaver and pull out
23 the dam.

24 If the risk to the road is not great or
25 imminent in the Ministry's -- in the company's

1 judgment, then the removal of the beaver may be delayed
2 until the regular trapping season and would be removed
3 at that time. So that's the normal course of events in
4 handling nuisance beaver problems associated with
5 forest access roads.

6 Q. Mr. Ward, I also have a question for
7 you on this slide. Could the type of obstruction that
8 we see here, this beaver dam, be a problem if this
9 particular water crossing were a fish migration route?

10 MR. WARD: A. Yes, it could be. Beaver
11 dams have been known to block fish migration.

12 Q. Thank you.

13 MR. ADAMSON: A. My next slide is No.
14 25, it is also Exhibit 6960 and it is simply a title
15 slide. What I would like to do is to illustrate the
16 implementation of several mitigation techniques with a
17 case study, a series of slides about the construction
18 of the Wapesi River bridge on the Vermilion River Road,
19 Sioux Lookout District. This is a project that I was
20 involved with, so I have a series of slides from
21 different trips up in that area.

22 This is an aerial photograph of the
23 Wapesi River.

24 Q. This is slide 26?

25 A. Slide 26, yes. And in the middle of

1 the slide is again a line which projects alignment of
2 the road.

3 Q. Just for the record, that's a black
4 line indicating transversely across about the middle of
5 the slide where the road alignment would go?

6 A. That's something I usually do after
7 taking photographs, is to immediately put the line on
8 because sometimes it is hard to tell where the crossing
9 is later on.

10 The Ministry built the crossing in 1987.
11 The location was important fisheries habitat, it
12 contains spawning areas for Wapesi Lake which supports
13 a fly-in tourism operation, and the bridge was founded
14 on the bedrock. It has bedrock banks here.
15 (indicating) We founded the bridge well back from the
16 river's edge on each side. The ground rises quite
17 sharply so we set the abutments well back from the
18 water so there was no work in the water at all with
19 this particular bridge.

20 Q. That's slide No. 27?

21 A. Slide 27, yes. Another advantage of,
22 in this particular case, of going up the bank was that
23 the approach road was quite high in elevation here due
24 to the terrain. So that by moving back and moving up
25 an elevation we were able to reduce the heighth of the

1 crib required.

2 This is slide No. 28. The approach to
3 the water crossing, to the river was -- from the
4 distance in the background, we came up from Sioux
5 Lookout, so vehicular access was from where the dot is
6 there in the background to the bridge site. On the
7 opposite side of the river there was an operation done
8 to clear and grub the right-of-way.

9 Q. That's on the near side of the
10 river --

11 A. In the foreground of the photograph,
12 yes. This was done in the winter before the bridge was
13 built. It was the Ministry's intention that the
14 contractor doing the operation was supposed to leave
15 the vegetation in place.

16 By error they grubbed it and exposed a
17 silty sand material, which is erodible. They exposed
18 that material to the potential for erosion and sediment
19 leading directly into the river. So the operation was
20 done in the winter, it was frozen soil of course, and
21 the potential impact could occur the next spring when
22 things melted.

23 So the district had the contractor place
24 a gravel blanket covering all of the silty sand
25 material and they also made them put in these logs

1 right in the gravel sheathing to divert runoff into the
2 bush so that water wasn't flowing straight down the
3 road into the river.

4 These mitigation techniques are not
5 described in the environmental guidelines. It was
6 developed locally based on an understanding of the
7 problem, the potential impact and how to treat it, and
8 it was effective in doing the job intended.

9 And that was one of the points I made
10 yesterday, is that there is many ways of treating
11 erosion and sediment. The book is not all inclusive,
12 people will show initiative, as in this example, to
13 come up with their own techniques.

14 This is slide No. 29 and it shows the
15 water crossing here just above the middle of the
16 photograph and the cleared right-of-way, and at this
17 stage the bridge is under construction. To the right
18 of the right-of-way is a temporary bridge, it has been
19 put across to get access to the opposite shore. In
20 this case it is a log bridge and it has been pushed to
21 the edge of the right-of-way.

22 I should mention the approaches to the
23 bridge here are quite straight. You can see it is a
24 straight line of sight right through. Most of your
25 bridges on access roads are single-lane bridges and

1 because there can only be one vehicle on them at a
2 time, it is very important that the drivers have good
3 visibility and have enough room to stop if they see a
4 vehicle coming in the other direction.

5 Slide No. 30 depicts the bridge under
6 construction. On the right of the photograph is the
7 temporary log bridge and, again, it clear spans the
8 whole river. There is nothing in the water, it is
9 rested up on this ledge of rock on one side and the
10 ledge on the other side. And the operation that's
11 going on here is that they are blasting a level area on
12 the rock to make a ledge on which to build the timber
13 crib.

14 You can note how the vegetation has been
15 protected here along the edge of the right-of-way, it
16 has been protected here along the water as much as
17 possible, and this is what we are getting at when we
18 say try to protect as much vegetation as possible.
19 Obviously, in this direct work area here there is
20 disturbance, though we try to keep disturbance outside
21 that area to a minimum.

22 Q. Is that a workman we see bending over
23 there?

24 A. Yes, I would say that's a workman
25 there, perhaps loading holes with explosives or

1 something like that.

2 On the far side of the bridge or water
3 crossing, the slope that had that special sheathing
4 material put on. When we came through to build the
5 road up that hill we had to get into a fairly long cut,
6 you can see in the background here that exposed slope
7 is a cut (indicating), in fact there was a cut as deep
8 as 10 feet and over about 500-foot length of the road.
9 This is slide 31.

10 We knew that the material was erodible so
11 we planned several mitigation techniques to make sure
12 sediment didn't get into the river, and they included
13 using rip rap material here, again, shot rock material
14 to put in the ditch bottom so it wouldn't erode.

15 We cut the slopes at a stable angle so
16 they would be stable standing there. There was a seed
17 and mulch application applied with a hydro-seeder,
18 which is a machine that blows a mixture of water and
19 seed and fertilizer and a shredded paper mulch. All
20 the banks were treated with that to put the materials
21 there for early revegetation.

22 And we also dug sediment traps at the
23 bottom of the ditch. Where the ditch comes down the
24 hill here at the base is a sediment trap before it
25 outlets into the river.

1 This shows how a sediment trap works,
2 it's slide No. 32. This is in the late rainfall,
3 basically the water comes down the slope, it's turbid
4 water and it is retained in this pond for a brief time
5 and then spills out into the river.

6 And the intention is that while it is
7 sitting in the pond some of the sediment settles out.
8 It's a commonly used technique outside of access roads
9 and now we are introducing it to access road
10 construction.

11 Q. Is that intended as a long-term
12 solution?

13 A. No, it's a short-term solution until
14 the vegetation grows up and prevents the source of the
15 erosion.

16 Q. And one question on your previous
17 slide, you don't necessarily have to go back to it.
18 You indicated that you got into a situation where you
19 had to do a fairly significant cut at the top of that
20 hill?

21 A. Yes.

22 Q. Why was that done?

23 A. The cut was needed to maintain the
24 geometric standard for the road and to make sure that
25 the hill was at a safe grade leading down to the

1 bridge.

2 Q. Thank you.

3 A. Slide No. 33 shows -- it's the same
4 location, same place that we took the picture in the
5 previous slide and you can see in the bottom of that
6 sediment trap is sandy material, fine sands that have
7 been left after the rain.

8 I took this photograph a few weeks ago
9 and so it's about one year after construction. The
10 grass is coming along, the trap is still there, there
11 is still capacity for more sediment.

12 This is another picture of a completed
13 bridge and --

14 Q. This is slide 34?

15 A. Slide 34, yes, the Wapesi River
16 bridge. Again, it's our standard design, these things
17 all start to look alike.

18 This area that is grassed over is where
19 the log bridge was, the temporary log bridge, we are
20 looking in an easterly direction there, and the natural
21 vegetation here has been preserved and along the bush
22 line.

23 So in this particular case, we again
24 applied seed fertilizer mixture to the bank to try and
25 encourage early revegetation. So we believe on this

1 site we can walk away from it and the long-term impacts
2 are negligible.

3 Slide No. 35 is also Exhibit 696P. It's
4 a text slide and I guess it summarizes the messages
5 that I would like to get across to the Board.

6 The way in which we ensure environmental
7 protection during road and water crossing construction
8 is through the timber management planning process;
9 through engineered designs and review of proposals;
10 construction adherence to guidelines; we use mitigation
11 techniques when they are required; the Ministry is
12 available to provide technical assistance and training;
13 we do compliance monitoring; and, where necessary,
14 enforcement will be used to ensure that mandatory
15 standards are met.

16 Q. Just one final question on that, Mr.
17 Adamson. You indicate that the Ministry provides
18 technical assistance and training.

19 Is it common for people -- for industry
20 staff, for instance, or for road crews within the
21 Ministry to contact you or your counterparts for that
22 type of assistance?

23 A. Yes, that happens regularly, both in
24 the pre-stage to talk about what might go in in a
25 particular site and also to go out and look at problems

1 where special efforts are needed.

2 MS. BLASTORAH: Thank you. Those are my
3 questions for Mr. Adamson.

4 MR. ADAMSON: I would like to, before I
5 move on. There was three messages, again I would like
6 to summarize this little presentation and my
7 presentation over the last couple of days.

8 Good engineering results in good
9 environmental protection, the link is there; we think
10 the tools are in place to design and construct safe,
11 economical, environmentally sound access roads and
12 water crossings; we think the cost of implementation
13 need not increase construction costs substantially;
14 and, in most cases, it is more economical to do it
15 right the first time.

16 The situations are site-specific and it
17 requires flexibility in the application of different
18 techniques that are available. The specialists who are
19 experienced and knowledgeable about the sort of
20 problems that may arise are available and we regularly
21 provide technical advice concerning both Ministry and
22 forest industry proposal.

23 MS. BLASTORAH: Thank you. Those are my
24 questions of Mr. Adamson.

25 THE CHAIRMAN: Thank you. Will we have

1 any difficulty if we re-commence at 2:15.

2 MS. BLASTORAH: No, Mr. Chairman, we
3 won't have any problem. I anticipate that we have
4 perhaps two hours of evidence left.

5 THE CHAIRMAN: Okay. We will come back
6 at 2:15.

7 Thank you.

8 ---Luncheon recess taken at 12:20 p.m.

9 ---On resuming at 2: 20 p.m.

10 THE CHAIRMAN: Thank you. Be seated,
11 please.

12 MS. BLASTORAH: Mr. Chairman, just one
13 housekeeping matter before we -- or actually two before
14 we begin with Mr. Hogg's evidence.

15 I neglected to file the hard copy of the
16 photographs for Mr. Adamson's last presentation. What
17 shall we title this one?

18 MR. ADAMSON: We can call it good
19 construction practices.

20 THE CHAIRMAN: So that will be exhibit
21 704.

22 MS. BLASTORAH: (handed)

23 THE CHAIRMAN: Thank you.

24 ---EXHIBIT NO. 704: Hard copy of photographs re: good
25 construction practices to be used
in Mr. Adamson's evidence-in-chief.

1
2 MS. BLASTORAH: And one other matter,
3 Mr. Chairman. I thought it might be a good idea at
4 this point to reserve an exhibit number for the hard
5 copy of Mr. Ward's slides which we will be providing to
6 Mr. Mander.

7 THE CHAIRMAN: Okay. Exhibit 705.

8 MS. BLASTORAH: (handed)

9 ---EXHIBIT NO. 705: Hard copy of slides to be used in
10 Mr. Ward's evidence-in-chief.

11 MS. BLASTORAH: And I have indicated to
12 the parties that I will provide them photocopies of
13 those slides and, actually, if the people I haven't
14 spoken to would let me know where they would like those
15 sent over the break, that would be helpful.

16 MS. SWENARCHUK: Ms. Blastorah's last
17 comment just reminded me of something that I think may
18 be of use to everyone here.

19 My office is moving as of August 1st. We
20 will be sending notice to everyone here where to send
21 correspondence, but as of August 1st there is a
22 different address.

23 THE CHAIRMAN: Okay.

24 MS. BLASTORAH: Thank you.

25 THE CHAIRMAN: And one last thing just

1 before you start. The Board has been discussing the
2 directions for notice with respect to the public
3 session in Dryden that we will be issuing.

4 We would like the Ministry's assistance
5 to advise us of the forest management districts in and
6 around Dryden from which people might be expected to
7 attend that location. And we are going to be directing
8 that a notice be placed in the local newspapers and
9 perhaps the Winnipeg Free Press 30 days ahead of time
10 and one week preceding the meeting, along with two
11 radio spots, one on the Thursday of the week preceding
12 and one on the Monday immediately preceding the
13 meeting.

14 We are also proposing that we would
15 commence the public meeting on Tuesday at 2:00 p.m. in
16 the afternoon and a further session at something like
17 seven or 7:30 that evening with a break for dinner
18 inbetween.

19 The following day we would also have a
20 session in the morning, probably afternoon, and a last
21 evening session in the event that there were people
22 that couldn't be handled the first night.

23 The Ministry could conduct its open house
24 on the Monday night and the Tuesday morning up until
25 about twelve, at which time we would start the other

1 session at two in the afternoon.

2 MR. FREIDIN: I take it you wouldn't have
3 any objection if we started that at two o'clock in the
4 afternoon the day before so we could get a full day in?

5 THE CHAIRMAN: No, no.

6 MS. BLASTORAH: And, Mr. Chairman, with
7 regard to the second day's hearing, do you want to
8 notify the public of the start time of that, or do you
9 anticipate doing that on the --

10 THE CHAIRMAN: No, I think we would
11 notify them of the start time commencing at say ten in
12 the morning. If it turned out that nobody showed up
13 for the second day, or showed up late and there was
14 nothing to do for the first hour and a half or
15 something, the Board would probably retire, anyone who
16 did show up would be redirected to either the afternoon
17 session that day or the evening session that day.

18 The problem is we don't know how long
19 it's going to take because we have no idea how many
20 people are going to show up. If it turned out that we
21 were inundated with people, we would then at least have
22 the Thursday to spill over onto, if necessary, because
23 we would not be holding regular sessions that week, we
24 would be basically devoting that week for this public
25 session.

1 MS. BLASTORAH: All right.

2 THE CHAIRMAN: But we will give you
3 precise directions for that notice shortly.

4 We would also like your assistance though
5 in connection with any distribution list that might be
6 applicable to the Dryden area; and, that is, the local
7 officials and things like that.

8 We have no idea whom they might be, we
9 obviously want to restrict the notice to in and around
10 the Dryden area as opposed to broad coverage and we
11 think your district manager or somebody locally
12 situated would have a much better idea than we would.

13 MS. BLASTORAH: One suggestion, Mr.
14 Chairman, is to use the lists that are used for public
15 notice at the timber management planning stage.

16 THE CHAIRMAN: Okay.

17 MS. BLASTORAH: And I think that that
18 would probably be a good place to start, in any event,
19 and probably quite exhaustive I would think.

20 THE CHAIRMAN: Okay. Well, that would be
21 for the written notice that would be just mailed out by
22 ordinary mail.

23 MS. BLASTORAH: Yes.

24 THE CHAIRMAN: In addition to that there
25 would be the publications in the newspapers and the

1 radio spots on the radio, so we feel that everybody
2 would certainly have notice.

3 We are also going to include in the
4 notice an indication of the other locations where the
5 Board intends to hold public hearings so that some
6 people from farther away don't feel that they have to
7 automatically come all the way to Dryden if there is
8 going to in fact be a public session in one of the
9 locales closer to them at some later stage.

10 MR. FREIDIN: With regard to those timber
11 management planning lists, I understand that one of the
12 districts, Dryden has about 1,300 individuals or
13 groups.

14 THE CHAIRMAN: Okay.

15 MR. FREIDIN: So we will probably get a
16 pretty wide coverage using that list.

17 THE CHAIRMAN: Well, the idea is to get
18 as wide a coverage as we can, because we don't intend
19 to go back to any of these locations, quite frankly,
20 unless there is a very good reason to do so.

21 MS. BLASTORAH: Thank you, Mr. Chairman.

22 THE CHAIRMAN: Okay.

23 MS. BLASTORAH: Just one follow-up
24 question for Mr. Adamson before we go on. I understand
25 there may have been some confusion on this point, so we

1 would just like to have him clarify it.

2 Q. You gave some evidence, I believe it
3 was the day before, or yesterday I guess, Mr. Adamson,
4 about the average amount of construction that could be
5 done in one construction period or one summer period
6 being five to ten kilometres.

7 Did you intend that to represent the
8 average construction for a management unit, or for any
9 given road?

10 MR. ADAMSON: A. What I was intending to
11 convey was on a particular road that is being built, a
12 new road in the bush, five to ten kilometres would be
13 the typical amount that might be built on that
14 particular road.

15 THE CHAIRMAN: And that would be without
16 any water crossings, or would it include that as well?

17 MR. ADAMSON: Small water crossings would
18 not hold it up.

19 Within the area of the undertaking there
20 is about 1,700 kilometres in total constructed or
21 reconstructed. So there is, in any given management
22 unit, there would be construction activity on several
23 different roads at the same time or in the same season.

24 MS. BLASTORAH: Thank you.

25 Q. I would like to turn to Mr. Hogg

1 next. I just have one question for Mr. Hogg. I
2 understand that you would like to respond briefly to a
3 few of the concerns that were raised in the statements
4 of issues filed by the other parties.

5 Would you do that now?

6 MR. HOGG: A. Yes. Just by way of
7 preamble perhaps, my comments are pretty brief and
8 although the other parties have taken issue with at
9 least portions of each of the paragraphs that summarize
10 my statement of evidence, my witness statement, we feel
11 that most of the negative -- potential negative,
12 relevant and major effects of access upon wildlife,
13 although I only dealt with them briefly in my written
14 evidence, have been, by and large, addressed by other
15 panels and other witnesses even on this panel, and so I
16 would only like to make about five points and I will
17 make them brief.

18 I have no slides and no overheads, and
19 it's just after lunch and that is another reason to
20 make it brief.

21 The first point is something the OFAH
22 expressed interest in and that is the topic of
23 information, information relative to access planning.

24 And the Board has heard evidence from Mr.
25 McNicol in Panel 7 and Dr. Euler in Panel 10 about the

1 nature and amount of evidence that is generally
2 available or developed specifically for use in timber
3 management planning. And this same information -- this
4 information identifies important non-timber values,
5 that leads to the development of a values map, leads
6 ultimately to the identification of areas of concern
7 and those areas of concern are taken into account in
8 all aspects of timber management including the
9 construction, the maintenance, the use and abandonment
10 of roads.

11 Now, whether the kind and the amount of
12 information that we have developed and are using is
13 appropriate, is adequate is something that we suggest
14 should be judged through the effects -- through the
15 monitoring program to in fact what is happening: Has
16 the value been protected, has it been enhanced, did we
17 achieve our objectives. And, of course, these and
18 other questions of that kind are going to be addressed
19 in Panel 16.

20 The second point is one that the Ministry
21 of Environment and NOTOA have questions about or
22 indicated they had some questions of us, and that is
23 how we mitigate effects or otherwise take wildlife
24 values into account in timber management planning and
25 our operations.

1 And I would like to reiterate, access is
2 treated again in the same fashion as the other timber
3 management activities. We have wildlife objectives for
4 the area, we have a number of guidelines that present
5 us with an array of options and through the selection
6 of those options we attempt to achieve our objectives.

7 The environmental guidelines that have
8 been presented in this panel addresses these matters
9 and, of course, the other documents that you have heard
10 about previously address the matter as well, the
11 resource manuals and the provincial moose guidelines to
12 some extent and they indicate the means that we
13 purposefully or otherwise minimize and mitigate the
14 possible effects of access on terrestrial wildlife.

15 Now, maybe speaking to the Environmental
16 Guidelines for Access Roads and Water Crossings
17 directly and the types of measures that are mentioned
18 in there that will have an implication for wildlife,
19 Mr. Adamson clearly indicated this document contains
20 statements about areas of concern and doing things to
21 protect those areas of concern in the development of
22 access. He talked about erosion avoidance and control,
23 that has clear implications for wildlife in terms of
24 general habitat protection.

25 On page 14 the aspect of minimizing

1 general habitat loss is addressed.

2 Q. This is page 14 of Exhibit 683?

3 A. It is, yes. In that first bullet
4 point on page 14 under good practices, clearing, talks
5 to not clearing an area larger than necessary to meet
6 the geometric standard for the road, and that obviously
7 will maintain habitat to some extent.

8 Similarly if we go to page 24, under item
9 5.11, road abandonment in the far right-hand column at
10 the top, it talks about regenerating the right-of-way.
11 Again, there's an implication there for wildlife. So
12 this document is speaking to wildlife. Although the
13 words may not be stated right there, it's going to have
14 that effect.

15 In terms of an itme like wetland
16 protection, if we look back at page 13 and the bullet
17 point second from the bottom on the left-hand column
18 talks about avoiding unfavorable construction areas as
19 much as possible and, as Mr. Adamson has mentioned,
20 that includes wetlands, they are not desirable places
21 to build roads. Implications for wildlife habitat
22 there.

23 And then over on page 21, if of necessity
24 we must build roads through what we classify as
25 wetlands, then appropriate measures should be taken and

1 on page 21, the second -- in the last bullet point,
2 column on the right talks about frequent cross
3 culverts, gives the suggestion that we should place
4 those culverts approximately every 300 metres, the
5 intention being to equalize the water pressure --
6 hydraulic pressure on each side of the road so you
7 don't experience fluctuations in water level. That
8 will have an impact on vegetation in those areas.
9 Again, that point is not made in this document but it
10 will have that effect.

11 The topic of wildlife movement across
12 these roads is facilitated -- wildlife movement across
13 these roads is facilitated by implementation of some of
14 the suggestions in the guidelines.

15 Minimizing right-of-way width, we just
16 talked about that in terms of protecting vegetation, it
17 also has the impact of meaning that wildlife are less
18 inhibited in crossing that right-of-way. Or if you
19 create openings in wind rows of grub material, that
20 will allow easier access, particularly big game across
21 those rights-of-way and that suggestion is in these
22 guidelines. We have talked nuisance beaver this
23 morning. Again it's here, it's in this document.

24 So this document, amongst others, tell us
25 how we can mitigate effects, most -- many of the

1 effects of road construction and use on wildlife. This
2 document is one of the tools we have to help us
3 mitigate those effects.

4 The third point I would like to speak to
5 is what I have called in my -- suggested in my written
6 evidence is the most significant effect of forest
7 access roads on wildlife and that is the idea that
8 these roads allow increased human use of the area and
9 for hunted species this means more hunting and trapping
10 pressure. And as I interpret their statements, this
11 issue has also been raised by the Ontario Federation of
12 Anglers & Hunters and the Forests for Tomorrow.

13 As a general rule we utilize trapping and
14 hunting control systems in an attempt to prevent
15 overharvest across a wide area, and the wide area being
16 a wildlife management unit, or perhaps a registered
17 trap line area or the province. And with respect to
18 hunting, I had the opportunity in Panel 11 to speak
19 fairly briefly to some questions of Mr. Hanna's and
20 some questions from the Board about this topic.

21 And the idea that improved access because
22 of new roads leads to heavier hunting pressure, it
23 leads to a greater moose harvest and a declining
24 population in certain locales within a wildlife
25 management unit. In other locales in that same

1 wildlife management unit the roads are deteriorating
2 because of lack of maintenance, habitat will be
3 improving, moose will be less vulnerable from hunting
4 and the moose population will be increasing.

5 Now, as the moose harvest continues and
6 we find an increase or a decline in populations -- as
7 moose harvest continue to increase or decline and the
8 moose population continues to decline or increase in
9 different parts of a wildlife management unit, we
10 continue to inventory the moose populations across an
11 entire wildlife management unit and monitor the moose
12 harvest and we adjust the hunting tag quotas on that
13 basis. And that is the way we ensure, we feel, our
14 progress toward the achievement of our moose hunting
15 objectives across the wildlife management unit.

16 And if a possible overharvest of moose is
17 perceived within a wildlife management unit, we take
18 some steps. The tag quotas are adjusted to reflect
19 what we think is happening with the population and,
20 that as I say, it's in this way that we continue our
21 currently steady progress toward the achievement of our
22 provincial moose management objectives.

23 With respect to the topic of trapping, we
24 rely upon quotas to achieve that same effect. And in
25 Ontario at this point it's fisher and lynx and beaver

1 and marten are the prime species that we attach quotas
2 to. And I think it's fair to say that so far, in
3 general, it's working, the system is working.

4 The provincial moose population is
5 growing, we are reaching our objectives, and the
6 furbearer populations are generally healthy and
7 trapping remains a viable activity in the province.

8 MRS. KOVEN: Could you remind me, Mr.
9 Hogg, with the moose tag system; are hunters restricted
10 to certain geographical areas, I forget.

11 MR. HOGG: Yes, they are. They are
12 restricted to a particular wildlife management unit.
13 They fill out an application for a particular unit,
14 they specify their preference for a moose -- excuse me,
15 a bull or a cow tag and the draw is held. If
16 successful, they can only hunt in that area for which
17 they have a valid tag for cows and for bulls. They can
18 hunt elsewhere if they would accept getting a calf,
19 there is no restriction on calf hunting and Mr. Hanna
20 and I had a bit of discussion about that in Panel 11
21 and 12.

22 MS. BLASTORAH: Q. Just one question on
23 that, Mr. Hogg. Why is there no restriction on calf
24 hunting?

25 MR. HOGG: A. They are the most -- the

1 young are the most productive most -- large largest
2 part of the herd generally, that is the part of herd
3 that is most subject to natural mortality. So the idea
4 is that that part of the herd can most readily be
5 hunted. Cows and calves -- excuse me, cows and bulls
6 they are fewer of them generally.

7 Does that answer your question?

8 Q. I think so.

9 A. The fourth point of five is that the
10 OFAH have indicated that they're interested in how we
11 quantitatively predict the impact of forest access
12 roads on terrestrial wildlife.

13 Now, we do have quantified objectives for
14 moose and some other species and a means of measuring
15 the achievement of those objectives, but the exact
16 numerical linkages between such things as access, the
17 use of roads by hunters and habitat and certain kinds
18 or certain quality or a certain distribution of it,
19 such factors as wildlife reproduction rates, predation
20 rates, and wildlife harvest, and all of these things --
21 the relationships amongst all of those aren't
22 explicitly known.

23 We know they affect what happens in moose
24 populations under the wildlife, but we don't know the
25 exact relationships. Nevertheless, we continue to move

1 towards achievement of our objectives despite the fact
2 we don't have this quantitative model.

3 And as Dr. Euler spoke to at some length
4 in Panel 10, we do this through a form of adaptive
5 management, by manipulating the variables that we
6 consider most important and those are generally, at
7 this point in time, wildlife harvest and habitat,
8 observe the results and adjust their management
9 accordingly in a way that we think is appropriate.

10 In the context of access roads,
11 site-specific adjustments can be made through the AOC
12 process. For example, we may feel it appropriate to
13 preclude roads from an AOC or to impose use
14 restrictions or special requirements on construction in
15 terms of location or timing. So that's the topic of --
16 and the quantitative prediction of impacts.

17 The fifth and final point here I would
18 like to mention is that -- and finally having spoken to
19 the major effect of wildlife -- on wildlife of road
20 use, I would like to mention a couple of points about
21 habitat and the effects of access on habitat by itself.

22 To the extent that habitat for a given
23 species is lost or disturbed or otherwise affected as a
24 result of road construction, that loss or effect is
25 relatively small in comparison to the effect of

1 harvest.

2 In Panel 4 I mentioned that we estimate
3 that roads and landings occupy about 5 per cent of the
4 land base. The nature of habitat alteration that
5 results from road construction is, in the short term
6 anyway, essentially the same as results from harvest.
7 When the habitat is altered, the trees are removed,
8 some species benefit -- excuse me, some species don't
9 benefit from that particular activity.

10 And speaking further to the term of that
11 particular effect, the loss of habitat to roads may in
12 some cases be more long term, and you have heard about
13 primary access roads and secondary access roads and the
14 period is five to 15 years or more. So in that sense
15 the effect of removing trees is going to obviously be
16 more permanent on those particular sites.

17 But again, however, they should be kept
18 in perspective in thinking about this fact that 5 per
19 cent of the land base is occupied by roads and
20 landings.

21 So given that different roads will be
22 constantly deteriorating while others are being built
23 in different parts of the wildlife management unit, and
24 given that our wildlife management is predicated on
25 maintaining viable populations at the provincial level,

1 the effect of access on habitat is relatively small.

2 So given that the amount of area affected
3 by roading building is small, and given that the AOC
4 planning and -- given the AOC planning protection
5 process, and given the routine mitigation measures
6 incorporated into road building and maintenance, in
7 summary we expect the effects of road access on
8 wildlife habitat to be minor, to be small.

9 And those are my five points.

10 Q. Just one question before we move on,
11 Mr. Hogg. You made the point that the location and
12 timing of road construction could be adjusted to
13 mitigate effects on moose. Would that same mitigation
14 technique be effected with regard to other species or
15 might it be?

16 A. Oh, very much so. There are examples
17 of concerns -- a concern, for instance, about a heronry
18 and road use being prevented near that heronry for the
19 period of sensitivity. I forget the exact dates, but I
20 have it somewhere.

21 Q. And how would that be addressed?

22 A. Well, simply a closure of the road,
23 will not be used for timber extraction during that time
24 or other kinds of use.

25 Q. Thank you.

1 MS. BLASTORAH: Those are all my
2 questions for Mr. Hogg.

3 THE CHAIRMAN: Thank you.

4 MRS. KOVEN: Two questions for Mr. Hogg.
5 Are there any situations where wildlife habitat will
6 change the alignment of a road?

7 MR. HOGG: Well, very much so in that the
8 identification, for instance, the primary corridor,
9 it's routine that the corridor avoid areas of concern,
10 and then at the annual work schedule level when you are
11 laying out the road itself, there are occasions where
12 values encountered within that corridor, it affects the
13 final alignment. So certainly there are examples like
14 that, yes.

15 MRS. KOVEN: You must have the same
16 situation that you have with fish habitat and; that is,
17 that you have a swamp on one side and a mountain on the
18 other and you would be obliged to go through some
19 valuable habitat area?

20 MR. HOGG: I am sure there are examples
21 of the rock and the hard place where you have to make
22 those kind of choices. Most often it would be
23 intrusion into an area such as the buffer around, for
24 instance, an osprey nest or a heronry, that sort of
25 thing, as opposed to the outright destruction of the

1 habitat in the case of impinging on that buffer.

2 MS. BLASTORAH: Q. Mr. Adamson, perhaps
3 I could ask you a question following that. Is it as
4 common to experience difficulties with regard to road
5 location arising from wildlife situations as it is from
6 fisheries situations and are those as difficult to
7 address?

8 MR. ADAMSON: A. I haven't experienced
9 being involved in relocating a road due to wildlife
10 concerns, but I think part of the problem with the
11 fisheries habitat is that we are heading for the
12 rapids, we are going to places where there is a
13 sensitive area. And roads -- my understanding is that
14 it is not too difficult to relocate roads around these
15 areas in most cases, if it is a terrestrial habitat.

16 Q. Thank you.

17 MRS. KOVEN: And one more point. In this
18 book of Environmental Guidelines for Access Roads and
19 Water Crossings, I see lots of references to fish, but
20 I can't seem to find the word wildlife here
21 specifically. Is there a reason for that?

22 MR. HOGG: Well, I think by and large we
23 have seen the greatest impacts of roads to be upon
24 aquatic life, potentially upon aquatic life. It is the
25 road crossing, it is the sediment, it is the erosion.

1 And, as I said previously, you don't find
2 wildlife in here stated very much, or if at all, but
3 the measures that are being taken, in many cases will
4 have the effect of being beneficial for wildlife and
5 many of those concerns of wildlife are taken care of in
6 the area of concern planning process.

7 MRS. KOVEN: I don't suppose the public
8 would know that though?

9 MR. HOGG: Not necessarily by reading
10 these guidelines. As I say, that effect is occurring
11 and we rely upon the area of concern planning process
12 to a high degree to protect important wildlife habitat
13 features.

14 MS. BLASTORAH: Q. Mr. Hogg, are there
15 other guidelines or direction that could be used in
16 conjunction with this manual to protect wildlife?

17 MR. HOGG: A. Well, the ones that come
18 to mind have to do with identifying areas of concern,
19 if that's what you are looking for, but...

20 Q. For example, the Moose Habitat
21 Guideline, could that be used in conjunction with this
22 to --

23 A. The moose guidelines do make mention,
24 one clause in the discussion of areas of concern, about
25 the idea if there are -- there may be a need to avoid

1 aquatic feeding areas, mineral licks, calving sites.

2 So that aspect is mentioned in the moose guidelines.

3 Q. And what about resource environmental
4 manuals? If a road crew, for example, ran into a
5 problem or if one were contemplated, is there guidance
6 available through resource environmental guidelines to
7 assist the wildlife biologist, for example, in working
8 with the engineering staff to develop prescriptions
9 that would mitigate the effects of the roads?

10 A. Well, again, if -- I think that sort
11 of information is incorporated into the area of concern
12 concept. If a heronry, as an example, is identified,
13 then we have a resource environmental manual that deals
14 with that topic. You go to that to see the appropriate
15 kinds of measures you would implement to avoid damaging
16 that particular value. So that's how those particular
17 manuals could be used.

18 Q. And are there any of the mandatory
19 standards in the guideline that address wildlife
20 concerns?

21 A. Mandatory standards in the
22 environmental --

23 Q. Yes, I beg your pardon.

24 A. Exhibit 683?

25 Q. Yes.

1 A. The one that comes first to mind is
2 the area of concerns. They are mentioned under
3 mandatory. I think it is page 9, I believe.

4 Q. Mr. Adamson, perhaps since you are
5 the author -- or the principal author of this guideline
6 you could comment on that as well. Are you familiar
7 with any other provisions in here that address wildlife
8 concerns or, for that matter, in the good practices?

9 I didn't mean to restrict it necessairly
10 to the mandatory standards.

11 MR. ADAMSON: A. I think Mr. Hogg
12 pointed out some of the good practices. There is a
13 couple of good practices I remember specifically, one
14 dealt with the windrow of grubbing material to leave
15 breaks in them so animals can pass through, and another
16 one had to do with snowplowing of roads in the winter
17 time to wing back the snow so that there's not huge
18 mounds there that animals have trouble getting over.

19 With respect to wildlife and
20 incorporation of guidelines in this type of document,
21 as I mentioned, I reviewed what other agencies had,
22 other road-building agencies and I didn't see any more
23 in there than what's in here. And I specifically
24 recall thinking: Well, you know, why aren't there more
25 things in here. So I think what we have is what came

1 out of the literature review.

2 MS. BLASTORAH: And, Ms. Koven, perhaps I
3 could just direct you to page 4 of the guidelines. I
4 have a couple of questions for Mr. Hogg I guess on
5 that.

6 MR. HOGG: Page 4?

7 MS. BLASTORAH: Page 4.

8 Q. Could you comment on whether the
9 provisions set out under the section: Why Guidelines,
10 addresses your interests as a wildlife biologist in
11 considering the effects of access on wildlife species?

12 MR. HOGG: A. Well, very clearly the
13 second bullet point in the left-hand column speaks to
14 terrestrial values in plants and animals. I could read
15 through the rest of this.

16 Q. That bullet point, how would that
17 consideration that's mentioned there -- how do you
18 anticipate that would be done?

19 A. Well, to me it is a further
20 recognition of our interest in integrated resource
21 management, recognizing that there are many values to
22 be taken into account in our inner-management, whether
23 it is harvesting or renewal or, in this case -- in this
24 document has to do with roads.

25 So I fully expect that, as stated here,

1 that these values are recognized and will be taken into
2 account as best they can when they are identified on
3 the site in question.

4 Q. And that identification would take
5 place where?

6 A. By and large in the area of concern
7 planning process.

8 Q. Thank you.

9 MS. BLASTORAH: Those are all my
10 questions for Mr. Hogg. Next is Mr. -- next and last
11 is Mr. Pyzer.

12 Q. Mr. Pyzer, you have used tables and
13 charts in presenting your written material, as was done
14 by Mr. Clark in past panels. Would you briefly explain
15 for the Board why you felt that format was appropriate
16 in this case and how those materials should be
17 interpreted?

18 MR. PYZER: A. Yes. I think the easiest
19 way to do that, Mr. Chairman, is if the Board would
20 turn to page 347 - and I am certainly not going to read
21 everything here - 347 of the statement of evidence.

22 And I have simply listed there in terms
23 of commercial stakeholders, recreational stakeholders,
24 local and traditional, the very same groups that you
25 have seen in many, many previous panels; Panel 7, Panel

1 10, and so we are very consistent. And I have
2 described the effects of roads in terms of the
3 socio-economic environment as those effects affect
4 these particular stakeholders.

5 So I guess what I am saying is, there are
6 no surprises, no differences, these are the same groups
7 that we are following consistently through.

8 Section 2.1 though, on the very next
9 page, on page 348, what I think it is important to
10 emphasize here is that the effects of access roads -
11 and, again, this is a recurring theme I think all the
12 way through - is that the effects are very variable
13 with regard to the socio-economic environment and
14 access roads and other stakeholders groups.

15 As I have indicated here, they can be
16 everything from large to small; they can be positive,
17 they can be negative; they can be short term, long
18 term; they can be locally or extensively based, and I
19 am -- I don't know want to say that anybody has even
20 suggested this in the past, certainly none of the
21 counsel have, but if anyone were to suggest that a
22 particular stakeholder group has almost a firm
23 position, personally I would have to say that is very
24 naive.

25 Within any stakeholder group you can find

1 individuals who can take any one of these positions and
2 you often find that, and I think that's just the nature
3 of the groups that we deal with.

4 The tourist industry is probably a good
5 case in point. My district, where I come from, Kenora,
6 it is hard to define even what is a tourist operator.
7 I know many tourist operators who cut wood for
8 Boise-Cascade, I know many tourist operators who are
9 trappers, I know tourist operators who are fly-in
10 outfitters, I know tourist operators who are totally
11 dependent on road access. I know other tourist
12 operators that are dependent on road access but have
13 fly-in outpost camps.

14 So to say that they support access roads
15 wholeheartedly or oppose access roads wholeheartedly as
16 an industry or as a stakeholder group is extremely
17 difficult to do. And that's something I would suggest
18 could be said for virtually every stakeholder group
19 that we deal with. It varies amongst those groups and
20 organizations depending on each individual's activities
21 and what he does and where he is located.

22 If we turn just for one second to page
23 350, what I would like to do to clear up one
24 interrogatory I believe that we received from NAN - I
25 believe it was from NAN, I may be mistaken here - but I

1 would just like to interpret this page. And for each
2 one of the pages that follow from 350 onward, you will
3 see that there is -- the stakeholder is identified, in
4 this case it happens to be commercial food fishermen.

5 Each stakeholder group is identified down
6 the left-hand side of the column. I have identified
7 whether we are talking about construction use,
8 maintenance or abandonment of the road, and I have
9 talked about what the potential socio-economic effects
10 might be.

11 The question that I got asked in the
12 interrogatory was: How did we determine what those
13 effects are. And the way that we did that was I went
14 to virtually -- in fact, I believe it was every
15 district in northern Ontario -- every district in the
16 area of the undertaking, and I asked those people that
17 had been involved in timber management planning to
18 identify what socio-economic effects had been
19 identified during previous timber management planning.
20 So what you see -- those effects are the real ones that
21 they were able to identify.

22 Above and beyond that, however, I also
23 asked them to identify any, and I suppose for lack of a
24 better term we could call that theoretical potential
25 effects as well.

1 And so people were -- they expanded their
2 mind and said: Well, we have never, ever had this
3 occur, in fact this is a potential and so we put it
4 down on this chart, which leads to the right-hand side.
5 And the right-hand side of those tables indicates the
6 measures that the Ministry could take to enhance,
7 prevent, minimize, mitigate or correct those effects
8 that we have identified, those both real effects that
9 have come up, even once in a past timber management
10 plan, or even are theoretically possible.

11 The only point I would hasten to add is -
12 and this, again, was part of an interrogatory - is you
13 should look at these potential effects as a block of
14 effects and the corrective measures as a block of
15 corrective measures and not look at a point form and a
16 point form and say: Well, that's the corrective
17 measure for that particular point. A couple of people
18 were confused I think when they read the chart and I
19 apologize for that.

20 Q. When Mr. Clark used this format,
21 tables and charts like this in earlier evidence, he
22 indicated that the same stakeholder could fall into
23 more than one general category.

24 I take it from your comments that that's
25 the case with your evidence as well?

1 A. It truly is the case. Certainly in
2 my experience as policy officer for northern Ontario
3 and certainly as a district manager in Kenora, it is
4 very hard to define an interest group as such just
5 because of the nature of, I suppose, the social and
6 economic environment in northern Ontario, that there
7 are large numbers of people who hold more than one
8 occupation, and the environment, the topography and the
9 nature of those industries are so diverse that the
10 people obviously tend to reflect that diversity.

11 Q. On pages 395 to 397 of your evidence
12 indicates that the resolution of conflicts relating to
13 forest access roads can result not only in benefits to
14 various stakeholder groups but also in increased cost
15 to the forestry industry and/or the Crown.

16 The issue of cost effectiveness of roads
17 was raised by the OFIA/OLMA in their statement of
18 issues, as was mentioned by Mr. Tenaglia. In your
19 experience, have you encountered any significant
20 additional road construction costs arising from
21 resolution of these types of user conflict issues?

22 A. Yes, I have. In fact, probably the
23 best example was the one that Mr. Adamson showed in his
24 slide presentation at Redditt, and I believe Mr.
25 Adamson's figures were -- the comparison was we

1 incurred an additional cost of about 25-, \$30,000 to
2 rebuild or construct, enhance a walleye spawning area
3 in order to avoid 100,000 or \$125,000 expense of
4 rerouting the road. Certainly, the \$25,000 was above
5 and beyond, but it was still a better investment than
6 rerouting that road and spending the extra 125-,
7 \$150,000.

8 Another example, and again Mr. Adamson
9 showed it in his slide presentation today and it was a
10 good example, was the one with the bridge going across
11 and there were two alternatives, one slightly more
12 expensive than the second.

13 The preferred route had an Indian burial
14 ground associated with it and we chose the second
15 route, and it was an opportunity to avoid it, not have
16 to look at the mitigation. There was extra expense
17 involved in that. Someone could argue whether that's a
18 significant expense or not, nevertheless we chose the
19 more expensive route and avoided the problem. I can
20 give you all kinds of other examples.

21 Q. I think that that's sufficient for
22 the Board -- for my purposes, unless the Board wanted
23 to hear some additional examples.

24 We have heard from Mr. Tenaglia about how
25 use management strategies can be used to mitigate the

1 effects of access roads. I understand the Ministry
2 received some interrogatories on how that can be done
3 and, in particular, in relation to particular
4 stakeholder groups?

5 A. I believe NOT -- NAN interrogatory,
6 rather, NAN No. 7 and No. 11 addressed the whole issues
7 of use management strategies. I don't think it is
8 necessary to turn to those right now and look at them.

9 And I don't say this in any kind of a
10 pejorative statement at all, but behind me I have put a
11 map up and it is one of the -- somewhat of the dilemma
12 of dealing with some of the NAN interrogatories in that
13 about 70 per cent of NAN communities are totally
14 outside the area of the undertaking. And in responding
15 to some of the questions from NAN, it is difficult to
16 focus just in and use a NAN example.

17 So what I would like to do in terms of
18 addressing that is talk about Indian issues and some of
19 those use management strategies in a broader sense
20 other than just referring to NAN communities, if I
21 could.

22 MS. BLASTORAH: Two things, Mr. Chairman.
23 I think we should mark the map as an exhibit and
24 perhaps I could ask Mr. Pyzer to indicate on that map,
25 if he is able to, which of the NAN communities shown on

1 that map are within the area of the undertaking.

2 MR. PYZER: The blue line is the area of
3 the undertaking. Everything south of the blue line and
4 north of the blue line is excluded from -- the NAN area
5 is roughly this boundary here and north of that.

6 MS. BLASTORAH: Q. Is that marked on the
7 map, Mr. Pyzer or --

8 MR. PYZER: A. Yes, it is.

9 Q. And could you just indicate what kind
10 of a line it is in case people want to go up and look
11 at the map afterwards?

12 A. It would be the southern boundary of
13 what is shown here as being James Bay Treaty No. 9 and
14 Moose Lake Treaty No. 5. I believe there are in the
15 order of either 42 or 43 communities within NAN and I
16 believe about 17 are within the area of the
17 undertaking.

18 Q. Thank you.

19 A. In those ranges.

20 THE CHAIRMAN: What are you going to
21 title the map?

22 MS. BLASTORAH: Is there a title on that
23 map, Mr. Pyzer?

24 MR. PYZER: It is called the Canada
25 Indian and Inuit Communities in Ontario.

1 MS. BLASTORAH: Perhaps we could mark
2 that as exhibit number....

3 THE CHAIRMAN: 706.

4 MS. SWENARCHUK: Could we have the title
5 again?

6 MS. BLASTORAH: Could you just read out
7 the title again, Mr. Pyzer.

8 MR. PYZER: Canada Indian and Inuit
9 Communities in Ontario.

10 MR. FREIDIN: Mr. Chairman, perhaps the
11 record should indicate that the Ministry has marked the
12 area of the undertaking boundaries and the line north
13 of which we are in is the area that applies to
14 Nishnawbe-Aski Nations.

15 ---EXHIBIT NO. 706: Map entitled: Canada Indian and
16 Inuit Communities in Ontario.

17 MS. BLASTORAH: Q. I believe you were
18 going to give some examples generally, Mr. Pyzer?

19 MR. PYZER: A. I can give you a couple
20 of -- or a couple of good examples. I believe one the
21 Board has already heard previously, and that is Lac
22 Seul ferry, an example involving the Lac Seul Indian
23 Band and McKenzie Forest Products, and that's where
24 they developed a joint proposal to link a previously
25 approved road on the reserve with a road in the Lac

1 Seul forest via the ferry and where the Ministry in
2 fact altered -- readjusted the timber management
3 planning process to permit the approval of that
4 proposal and to the extent that it has to permit it to
5 proceed to where it is today.

6 During the timber management planning
7 process in the Hearst Forest, the Constance Lake Band
8 raised a couple of concerns with the Ministry during
9 the preparation of that plan. One was primarily a
10 safety-related concern and it was related to the Rogers
11 Road. Of secondary concern to the Indian Band there
12 was maintenance cost on the road.

13 The Ministry, working with the Band,
14 developed another primary access road, I believe it
15 was, adjacent to the reserve, linked Highway 63 and was
16 able to mitigate any concerns that they had -- or both
17 of those concerns relative to safety and maintenance
18 cost.

19 Also in Hearst, another good example,
20 during the preparing of that timber management plan the
21 Band raised some concerns about both subsistence and
22 resource harvesting along the lines of trapping and
23 harvest-related activities and road access. And the
24 concern was that in fact that the Ministry not close
25 the access roads, they wanted them open to access areas

1 that they were harvesting resources and that was
2 reflected in the timber management plan.

3 An example more close to home for me is
4 dealing with Grassy Narrows in the Packwash plan that
5 was just approved this April 1st. Off the English
6 River Road is the Tide Lake Road and the Tide Lake Road
7 running north of the English separation river system
8 accesses that area of the English/Wabigoon River system
9 where the Band has just purchased Bald Lake Lodge,
10 Barney's Bald Lake Lodge that Barney Lamb owned 10 or
11 12 years ago. That's recently been purchased by the
12 Band, I believe they are entering into an agreement
13 with Minaki Lodge to run that.

14 We have also got into a number of joint
15 ventures with the Band to develop tourism opportunities
16 on the river system, remote outpost camps under land
17 use permit. The Band had a concern with that road, as
18 did another tourist operator on the system, and in the
19 use management strategy it reflects in fact that that
20 road is closed to other than approved resource
21 harvesters.

22 And it is a case where, from a Band
23 perspective, they probably got the best of both worlds.
24 The road is closed in terms of protection of the
25 tourist operation, but the road is open as far as

1 legitimate or approved resource harvesting goes. So
2 through a travel permit, any Band member who is a
3 trapper, a wild rice harvester or has a reason to be
4 behind that road is permitted to be behind it to carry
5 out that approved resource harvesting activity.

6 Similarly with the Maybrun Road, another
7 example in Kenora District, running off the highway
8 between Fort Frances and Kenora, a large primary access
9 road that's several kilometres in distance. It is a
10 closed road system, it is closed for travel permits
11 only. The Band came in, the White Fish Band in this
12 case, they access a large series of lakes behind the
13 road for wild rice harvesting purposes, for trapping,
14 for a number of resource harvesting activities, they
15 expressed a concern about that.

16 We have reviewed that request, we have
17 reviewed that input, we saw absolutely no reason why
18 they should not be permitted behind the road for those
19 resource purposes that didn't conflict with the reason
20 why the road was closed which, in this case, happens to
21 be to protect the remote tourist industry, and so they
22 are permitted and that is reflected in the use
23 management strategy.

24 Finally, just a couple of other quick
25 examples closer to home here in Thunder Bay. The Lac

1 des Mille Lacs Band and the Seine River Bands in
2 Thunder Bay District, and the Stanchicouming Band in
3 Fort Frances District, and I believe also the Lac la
4 Croix Band in Atikokan District have all either tapped
5 on to existing forest management access roads that were
6 constructed for forest management purposes to access --
7 they have actually added on to these roads, to access
8 portions of Band lands which were previously remote.
9 They were able to tap on or they have constructed new
10 roads in that area through approval of the Ministry of
11 Natural Resources to access areas of the Band that were
12 previously inaccessible.

13 I guess the point I want to make, again,
14 and it relates as well to Indian Bands, as I mentioned,
15 to the tourist industry and every other, is that you
16 cannot generalize, you cannot say that every Indian
17 Band wants the same end result relative to access
18 roads. You must look at each one on an individual
19 basis and consider what their concerns are. They are
20 obviously as different as Red Lake is from Dryden, is
21 from Fort Frances/Kenora, Toronto/Thunder Bay.

22 Q. Mr. Pyzer, you have indicated some
23 ways through your examples there of how effects of
24 access can be -- effects of access on natives can be
25 mitigated.

1 Can a use management strategy also be
2 used to mitigate the effects of access on various
3 sectors of the tourism industry?

4 A. The obvious answer is yes, obviously
5 yes, in fact, from my perspective that is probably the
6 reason use management strategies are used the most.

7 Q. And I understand that you have some
8 considerable experience in dealing with the tourism
9 industry in your position as district manager?

10 A. Yes, that's correct.

11 Q. And I believe it was noted during
12 your qualification in Panel 7 that you were awarded the
13 President's Cup in 1987 by the Northern Ontario Tourist
14 Outfitters Association for your contribution to tourism
15 in northern Ontario?

16 A. That's correct.

17 Q. And, in addition, you were
18 responsible for coordinating the development of the
19 Timber Management Guidelines for the Protection of
20 Tourism Values?

21 A. That's correct, I was the only
22 Ministry person involved, yes.

23 MS. BLASTORAH: And that is Exhibit 379
24 for the Board's information.

25 Q. During previous evidence the Board

1 has heard considerable discussion about the effects of
2 timber management on the remote tourism industry. In
3 addition, I understand that the subject was raised by
4 NOTOA both in their interrogatories and in their
5 statement of issues.

6 With respect to access roads and based on
7 your personal experience that we have just reviewed,
8 would you discuss how use management strategies can be
9 developed to address the concerns of the remote tourism
10 industry?

11 A. Yes. For the Board's -- and again I
12 wouldn't expect anyone to turn to these immediately --
13 but if the Board at some point in time would like to
14 read those interrogatories, I will simply read the
15 numbers off quickly here and then I will summarize in
16 fact what they have had said.

17 But I believe they were Interrogatory No.
18 12, 30, 31, 35, 36 and 37. And with all due respect to
19 Mr. Edwards, if I could be so bold to kind of
20 generalize in terms of what they were saying, I believe
21 they came from the perspective that, as I think most of
22 NOTOA's interrogatories did, of a remote tourism
23 industry. And there is absolutely no question but that
24 the remote tourist industry is extremely important,
25 absolutely no question about it. I believe the

1 Ministry has recognized that to a large extent in the
2 guidelines and has reflected that fact.

3 But having said that, I don't think that
4 that paints a totally fair picture of the tourist
5 industry in the province. Again, if I can use my
6 district as an example. We have 110 major tourist
7 establishments on one lake in my district, Lake of the
8 Woods and those 110 plus tourist operators represents
9 an industry that is larger than the entire tourist
10 industry in the Province of Manitoba.

11 It's a multi-million dollar industry and
12 by and large those people rely on road access. That
13 again is not to say that the remote tourist industry is
14 not important, it's absolutely critical, it's extremely
15 important, it's extremely viable. But there is another
16 side to that coin and I think we can't forget that
17 there is another side to that coin.

18 In fact in NOTOA Interrogatory 37, if the
19 Board would go back and read that at some point, I have
20 given a couple of examples there - and I can just
21 quickly go through them now - but one happens to be
22 Rocky Lake camps on Highway 731 in Kenora District. Ed
23 Wilson's Camp caters to, yes, 350 I believe plus bear
24 hunters alone in the springtime, operates an extremely
25 large tourist operation based on fishing, hunting,

1 totally dependent on road access.

2 Mr. Wilson happens to be one of those
3 people as well, he's a trapper, he happens to cut wood
4 for Boise-Cascade, he operates his own logging,
5 contracting, building, one of our larger -- one of our
6 larger tourist operators in the district. He relies on
7 the fact that there are access roads for his guests to
8 drive on.

9 To the extent that when we abandon a road
10 he attempts to maintain those roads that we have
11 abandoned and from a natural perspective he attempts to
12 keep them going as long as he can to continue that
13 access for his operations, for his clients, and for his
14 industry and for his business. And to the extent that
15 we have provided new opportunities on new access roads,
16 he continues to use those as well.

17 And I suppose that relates also to NOTOA
18 No. 40 Interrogatory in terms of distributing fishing
19 pressure and hunting pressure. Not only does that --
20 not only do those roads do that from a tourist industry
21 perspective, but they do it from a resident angler and
22 hunter perspective as well. And to the extent that we
23 can marry those uses and marry those objectives, that
24 is what we try to do.

25 Another -- one final example would be a

1 camp, High Wind Camp on the 314 road in Kenora
2 District, Mr. Lyn Marks. Again, a tourist operator who
3 happens to be a trapper and who also again happens to
4 cut wood for Boise-Cascade under contract. He's on the
5 314 road system, that's an area we have designated for
6 high quality remote tourism, it's an area we are trying
7 to abandon the roads and, in fact, we are abandoning
8 the roads. It's an area that we have developed a fish
9 management plan for, as we have our entire district.
10 We have recognized the need and the desire in fact to
11 maintain that as a high quality remote fishery area and
12 for remote high quality tourism.

13 But all of that notwithstanding, there is
14 a tourist operator who does not like that decision
15 which we have made and which we have made through a
16 number of public processes, one every of being the fish
17 management plan of which the Ministry of Tourism and
18 Recreation consultant in our district was a member of
19 the planning team.

20 Again, all of that notwithstanding, there
21 is a tourist operator who doesn't particularly like the
22 decision that we have abandoned those roads and he's in
23 there as much as he can attempting to maintain them as
24 they naturally abandon and he knows and he has admitted
25 to me that he's fighting a losing battle on that.

1 In fact, I could go so far as to say he
2 is the last last tourist operator I talked to before I
3 came down here and it happened to be on the day that I
4 received the NOTOA Interrogatory and he asked me how
5 these hearings were going and I told him this was the
6 kind of issue I was dealing with in terms of the
7 industry. And he said: Under no circumstances, do not
8 hesitate to use my name as saying I am a tourist
9 operator who wants road access, and I do not
10 particularly like the fact that we are abandoning as
11 many roads as we are abandoning.

12 Again, the point I want to make though is
13 that it's not that whether Mr. Marks is right or wrong
14 or Mr. Wilson is right or wrong or NOTOA is right or
15 wrong, the point is, is that it's extremely difficult
16 to generalize and say this is what the tourist industry
17 wants because there are many segments of that industry
18 and I would have to go so far to say, personally, I
19 probably deal with more tourist operators - and
20 possibly this is because we do such a good job
21 protecting the remote ones - I would have to say I
22 probably deal with more tourist operators who are
23 concerned with the fact that I do not maintain roads
24 and I am abandoning roads for the benefit of the remote
25 fly-in fisheries than I do tourist operators from the

1 other perspective.

2 Q. Mr. Pyzer, you have indicated there
3 is a range of views then within the tourism industry
4 relating to access and its benefits or disbenefits. Is
5 that also the case with other stakeholder groups?

6 A. Yes. Again, and I could list them,
7 bait fishermen, trappers, commercial fisherman, anglers
8 and hunters, they are a spectrum and it's important to
9 realize that we are dealing with a spectrum in terms of
10 all of those stakeholder groups and that spectrum is
11 everything from a section within -- any one of those
12 industries, a sector who feels extremely strongly that
13 all access roads are bad and there is another sector
14 who feels all access roads are good. And some are
15 inbetween those extreme, I think lie probably the
16 majority of those constituents within the stakeholder
17 group who feel that there are both goods and bads and
18 it's depend on the circumstance. But it is difficult
19 to -- in fact, I would go so far as to say it is
20 impossible to paint a black and/or white picture, it is
21 varying shades of gray.

22 MS. BLASTORAH: Mr. Chairman, I don't
23 intend to ask Mr. Pyzer to review these in detail, but
24 we did file some other NOTOA interrogatories relating
25 to this topic, particularly NOTOA 26, 28 and 29 which

1 gives some additional examples.

2 Q. Are the concerns of the remote
3 tourism industry addressed or addressable through any
4 mechanism other than use management strategies?

5 MR. PYZER: A. Well, of course because
6 everything we do in terms of resource management
7 planning has its -- or takes its direction, we almost
8 go back now to panels -- the very earliest panels when
9 Mr. Monzon and Mr. Douglas were here talking about
10 OSLUP and Cabinet direction and regional strategic land
11 use plans and district land use guidelines, all of
12 those have tourism strategies within it.

13 I would hasten to add though - and this
14 is a point that I don't think gets made often enough
15 and is not clear - is that the Ministry of Natural
16 Resources is not the ministry responsible for tourism.
17 I, as district manager, am awaiting for the Ministry of
18 Tourism and Recreation to produce a strategy. I don't
19 know, to be honest, how many remote tourism lodges are
20 desirable for Ontario. I don't know what the
21 provincial target is in terms of outpost camps.

22 The only reason I mention that is because
23 that's not my mandate, it's certainly not the Ministry
24 of Natural Resources mandate, but to the extent that
25 there is provincial direction there from those other

1 ministries, they get adopted in our management plans.

2 And so, yes, there is direction in the
3 regional strategic plans; yes, there is direction in
4 district land use guidelines. All of the districts
5 have produced fisheries management plans and I can tell
6 you that the direction within our strategic and
7 district plans is reflected more specifically in those
8 fisheries management plans.

9 I just gave you the example of High Wind
10 Lake area and the Dryberry Lake zone which has been
11 designated as a remote fly-in tourist area and high
12 quality fisheries and we have done the very same for
13 the Atikwa zone, we have done the same for north of the
14 English River bridge. We have identified those areas
15 where we want to maintain that industry.

16 And, similarly, we have done the same
17 from an OFAH perspective where we intend to let -- and
18 tend to deliver the target of resident angling.

19 Q. Mr. Pyzer -- oh, sorry.

20 A. The only other point I would make in
21 terms of the evaluation would be things that we have
22 done like Crown land camping programs. Again -- in
23 fact, the Crown land camping program was an initiative
24 developed jointly between NOTOA and our Ministry and,
25 in fact, our -- the northwest region and Kenora

1 District were the pilot program for three years and as
2 we went through that in terms of monitoring, and I
3 believe we reflected that in NOTOA Interrogatory 32,
4 the impacts of that program, I believe it was something
5 in the order of the magnitude of 82 or 85 per cent of
6 the tourist industry indicated a direct relationship in
7 terms of increased business, and an improved business,
8 and an improved business climate as a result of having
9 put that in place.

10 So, yes, it gets reflected in many other
11 places.

12 Q. Mr. Pyzer, have you had any personal
13 experience with restricting use on access roads?

14 A. Yes.

15 Q. Could you give some examples?

16 A. I guess I have already mentioned a
17 few in what I have talked about. Certainly the Maybrun
18 Road, the Tri-Lake Road, Cameron Road, Maybrun, Lenin,
19 Umfreville. Possibly the best though was that Tide
20 Lake Road that I talked about previously north of the
21 English River bridge. And there was an indication
22 again of the Indian band there, in this case the Grassy
23 Narrows, together with another remote fly-in tourist
24 outfitter, Mr. Mikeweshan and in fact I believe Mr.
25 Johnson from Kenora air service and a number of others

1 were also involved there, fly-in tourist outfitters,
2 good businesses in terms of dependent on that kind of
3 quality of fishery and experience and we were able to
4 accommodate that within the timber management planning
5 exercise.

6 The end use strategy was in fact to
7 locate the road and to build the Road but in fact have
8 it closed to various types of use. In fact, it's
9 open -- or it's closed but it's open for controlled
10 harvesting by other stakeholders. But it's -- again, I
11 believe it's a win/win and I believe the supplementary
12 documentation on file of that indicates the acceptance
13 by those other stakeholder groups.

14 Q. And in terms of the reasons why the
15 roads were closed or use was restricted; that is, the
16 objectives in doing that, would you say in retrospect
17 that the strategy has been successful in the examples
18 you have given?

19 A. I would say two things and I say this
20 in total honesty to the Board, is that the two things
21 that have surprised me the most -- certainly the first
22 is how smoothly you can close a road down or restrict
23 travel if you plan it properly and, obviously, that is
24 the big qualification.

25 By no means am I suggesting that when we

1 have closed any one of these roads - and we probably
2 have a dozen of of them, a dozen major timber access
3 roads closed in our district - and primarily they are
4 closed to reflect the desires of the remote fly-in
5 fishing industry and I'm certainly not suggesting that
6 people who are now -- who have been told as a result of
7 that process that they can't get behind there were
8 thrilled with that decision, because they are not
9 thrilled with the decision.

10 But I think what there is is a grudging
11 acceptance that the Ministry has been honest, that the
12 Ministry went through a planning process, that they
13 laid their cards out on the table, that they talked
14 about what the effects to these tourist operators may
15 or may not be, we talked about what the number of
16 people in terms of associated jobs and the value of
17 those to local communities.

18 And I think there is a begrudging
19 acceptance; that While they may not like it, they
20 understand or at least feel that the process was fair
21 and the decision has been made and I will accept and
22 they seen where they had an opportunity to provide that
23 input, that it was considered and a decision made as a
24 result.

25 Q. Mr. Pyzer you indicated that where

1 roads are abandoned -- or closed rather or restricted
2 that people may accept the decision, they aren't
3 necessarily happy with. It that also the case when
4 roads are not closed?

5 A. Oh absolutely. I suppose if there is
6 anything that -- there is anything that characterizes
7 the situation is that certainly I feel like I am the
8 ham in the middle of the sandwich, no matter what the
9 decision is, there is a group that feel -- or a number
10 of groups that feel quite happy with the decision;
11 there are a number of groups that feel less than
12 thrilled about the decision.

13 And when we are talking about something
14 as significant to anglers and hunters and tourist
15 operators as opening or closing a Road and it's
16 difficult to say we are going to take a middle of the
17 road or something that varies in there; it can't be
18 half opened and it can't be half closed.

19 Yes, there are people that take a
20 position polarized regardless of the decision.

21 Q. And you have indicated that people
22 may not be happy with the decision, but if I understand
23 you correctly, you are saying they basically agree to
24 live with it. Have you had problems with compliance or
25 how does that attitude affect compliance with any

1 restrictions that may have been imposed?

2 A. Well, I think that could well be the
3 test is, we have made a decision, the road is closed,
4 it's posted and in every one -- certainly in Kenora
5 District, if I use that as an example, every one of our
6 closed roads forms part of the patrol area for our
7 conservation officers. And as part of the enforcement
8 plan, part of their responsibilities are to be on that
9 road and to enforce the road closure and the compliance
10 rate has been quite good.

11 It's been along the lines that you would
12 expect in terms of compliance with most any other
13 fishing, hunting or Act where it has been posted and
14 again it's the 95/98 per cent of the people comply with
15 that decision, and the one per cent that don't have
16 been charged.

17 Q. And under what authority are they
18 charged?

19 A. There is two sections within the
20 Public Lands Act - to be honest don't believe I have
21 them right here in front of me, I can dig those out -
22 but the Public Lands Act is the authority and I believe
23 the maximum fine is \$5,000 now.

24 Q. And have you found those restrictions
25 are successful not only in achieving your objectives as

1 stated but in protecting values for which the use
2 management strategy was adopted; perhaps that is the
3 same thing, but is there any distinction there?

4 A. This sounds kind of corny, I
5 certainly hope when the Board goes to Dryden and the
6 Board comes to Kenora that those people that are
7 sitting behind those closed roads come out and answer
8 that question for the Board, because what they are
9 telling me is: Absolutely, yes.

10 I can tell you an example right now and I
11 hope Val and Lyle Oman on Salveson Lake come out to
12 Kenora and tell the Board that they are putting 40 to
13 \$90,000 in the upgrading of their outpost camp this
14 current year and you can paddle down that creek and you
15 will see the English River main access road going right
16 down past that operation but it is closed, you cannot
17 get on to that creek.

18 And there are two tourist operators
19 between spending between 40 and \$90,000 upgrading it on
20 the basis that we have closed that system down. And
21 they made that decision.

22 I would say we met with those tourist
23 operators and we met internally and we met with the
24 tourist industry, the tourist representative to solve
25 that problem, we were meeting with them on, if it

1 wasn't every other day basis, it was on a once a week.
2 And we were phoning them and finding where they were,
3 they were down in Florida on their winter vacation, to
4 make sure they understood what we were doing.

5 And I'm going speak for them right now
6 and say, yes, you will find lots of people very happy
7 with those decisions we made. Unfortunately the happy
8 people don't seem to come out and say that they are
9 happy.

10 Q. You indicated earlier that closure of
11 a road doesn't necessarily preclude approved resource
12 harvesters from using it. Do such individuals have an
13 automatic right to use the road? And what do you mean
14 by the term 'approved resource harvesters'; to begin
15 with perhaps?

16 A. It's only because I have even gotten
17 involved into this process right now. I think one of
18 the worst things we do and one of the biggest misnomers
19 that we have are calling them closed roads because --

20 Q. Just a sec, Mr. Pyzer.

21 THE REPORTER: Excuse me, but you are
22 going to have to slow down.

23 MR. PYZER: I'm sorry. I think it's a
24 real misnomer to call many of the roads that we are
25 talking about closed roads because that implies or it

1 gives the impression that a sign is up and no one is
2 allowed behind that sign.

3 And, again, certainly in Kenora District
4 and I believe I gave you a dozen plus examples of where
5 we have those closed roads, they are not closed to
6 everybody. Trappers go down those roads with approval,
7 commercial bait fishermen, if that road accesses a lake
8 where -- a small pond or a small lake where they put
9 their bait traps, if that is the reason they are going
10 down the Road then they are given -- they can get an
11 approval to be on that road for that activity.

12 Virtually every resource harvesting
13 activity that we talk about in those stakeholder groups
14 would be given or would certainly be considered
15 favourably to get a permit to be down the road. And
16 the reason for that is simply that it doesn't conflict
17 with the reason that the road is closed which, as I
18 said before, 99 times out of a hundred is for remote
19 tourism.

20 So I guess what I'm saying is, if you
21 have got a 20-mile main access road or secondary road
22 that is closed because of five or ten or a number of
23 tourist outfitters on large lakes down that road, but
24 there may be 15 or 20 small bait fish lakes where no
25 one will ever see them and they are part of someone's

1 licence and previously he had to fly his aircraft into
2 them, today he can drive to them, or use an ATV to get
3 to them, or he had a trap line that he had to go out
4 and a spend a week in the bush under bad ice conditions
5 skidooing and today he can drive to it and stay at home
6 while his kids go to school, generally most people
7 don't object to them being down there as long as they
8 have come in, indicated what the use is.

9 And I guess the other test of that is the
10 number of tourist operators who come in to get approval
11 to be down that road for a reason other than hunting
12 and fishing. And, again, we look at that very
13 favourably.

14 A typical lake lodge on the Maybrun Road
15 there is absolutely no reason at all not to give
16 that -- the tourist operator authority to come down
17 that road once or twice or four times a year to bring
18 supplies into the camp. If that means driving down the
19 road and putting the supplies in there as opposed
20 suppose to flying them in at 20 or \$40,000 in the
21 winter or plowing a site out to bring a large aircraft
22 in in the winter to plow on the lake a landing strip
23 when there is a road there in the summer that he can
24 drive down, that does not make sense.

25 And they come in and they ask for those

1 approvals and we grant them. And so to say that they
2 are closed, truly is a misnomer.

3 Q. What about anglers and hunters, are
4 they still free to use the lakes and rivers?

5 A. And that is the key point. From an
6 angler and hunter perspective those roads are
7 probably -- they are, they are closed by and large to
8 resident anglers and hunters, and they are closed
9 because that usually is the one activity that does
10 conflict with the remote fly-in tourist outfitter.

11 However, the key point is that it's the
12 use of the road that we are talking about, it is not
13 the use of the resource. And so to the extent that
14 those people have been portaging into the lake, have
15 been canoeing into the lake, however they have gotten
16 to that lake for the past 10 years, 100 years, 500
17 years, they can continue to go in that very same way.

18 All we are talking about in that one
19 instance is a road that was constructed for a specific
20 purpose not being opened to them to use for their
21 purpose because it conflicts with the reason why that
22 road is closed. But in terms of the resource and the
23 activity, they can certainly be in hunting and fishing
24 in those areas and fishing on those lakes using the
25 traditional means that they came in in the past.

1 I gave you an example of Salveson Lake,
2 and Salveson Lake people still fly in in the wintertime
3 and they still portage in via canoe from the river
4 system. And as far as the tourist operators are
5 concerned, they are not concerned with that kind of
6 activity and they said on more than one occasion it's
7 not the person who is prepared to put a canoe on their
8 back and hike in here and fish it in the traditional
9 way that concerns us, it is the person that drives up
10 the Road creates an access point, launches 10 or 12
11 boats, brings in a houseboat or a cabin cruiser, that
12 is the problem from a remote fly-in fishing
13 perspective.

14 Q. You have indicated a number of
15 exceptions that are a possibility with regard to
16 so-called closed roads. Is it common in your
17 experience for access roads to be closed to all
18 non-forest industry traffic?

19 A. No, no. Again, it's really the point
20 that I have tried to come from. The closed business is
21 really a misnomer, they are generally restricted access
22 roads; you have to look at the reason, the objective
23 why the road is closed, and if those uses do not
24 conflict with the objective, then generally the
25 Ministry would consider allowing that person to be down

1 the road or allowing that activity to occur with the
2 consequential benefits of having the access road there.

3 Q. And do you have any idea how many
4 access roads are closed in the area of the undertaking
5 or in the province or restricted?

6 A. I believe there was an interrogatory,
7 I believe it was Ministry of the Environment
8 Interrogatory No. 8, and if my memory serves me
9 correctly I believe 94 per cent of the
10 primary/secondary access roads in the province are open
11 and 6 per cent of those roads are restricted to certain
12 classes of use.

13 Q. And those -- that 6 per cent that is
14 restricted use, does that mean that they would be
15 closed in the conservative way, I mean closed to all
16 non-forest industry use, or would that mean road use
17 restrictions?

18 A. No, it would be in the broader
19 context, closed possibly to only one or two uses and
20 open to a number. I'm saying that there are 6 per cent
21 that have some conditions relative to travel
22 restrictions on them.

23 Q. Thank you. With respect to the
24 effects of access roads on the tourist industry, and I
25 mean above and beyond the comprehensive planning and

1 public consultation processes outlined in the Class EA
2 Document that we have heard something about in past
3 panels, are there other forums within which tourist
4 operators can discuss access road issues with Ministry
5 staff?

6 A. Yes, absolutely. I think back in
7 Panel 7, Mr. Chairman, I referenced the fact that with
8 regard to a tourist operator there are many tourist
9 operators in the district. My district as an example,
10 I would see possibly a dozen to 15 plus times in the
11 course of a year. And I can say that because in many
12 cases they are forced to come into the district office
13 once every month to pick up their fish and wildlife
14 hunting licences.

15 Above and beyond that, both -- all of
16 the - or at least the ones I'm certainly familiar
17 with - the tourist associations that are members of
18 NOTOA, KDCA and NWOTOA is two examples - NWOTOA being
19 the Northwest Ontario Tourist Outfitters Association -
20 both of those groups hold spring meetings and they also
21 hold fall meetings and the Ministry is a regular
22 participant at every one of those meetings.

23 And, again, I do not say this in any way
24 pejorative sense at all, but in my experience Ministry
25 staff outnumber tourist operators at those meetings

1 certainly at the last I would say, and I've been at 14
2 years' worth of those bi-annual meetings.

3 And I say that as a very positive -- a
4 very positive message, that there may be 15 or 20
5 tourist operators there, there may also be 30, 35
6 Ministry staff in attendance because that industry is
7 extremely important and we view it as being extremely
8 important and we are there to answer their questions.

9 And I can tell you that many of the
10 questions in fact are timber management oriented and
11 that we respond and come and address any of the
12 concerns which they raise.

13 In addition to that, there is a bear pit
14 session at those meetings where the district manager
15 and/or regional director sits and answers any question
16 that the tourist industry of those associations wants
17 to put forward and is accountable for any of the
18 decisions which the district managers have made and
19 will talk about any access road or any use restriction
20 or any problem which they may have.

21 Of course as well as that, there is also
22 the annual NOTOA Convention and at that convention --
23 that starts with the Minister, the Deputy Minister, the
24 Assistant Deputy Ministers and the Regional Directors.
25 On average there is probably 35 to 50 minimum Ministry

1 staff in attendance.

2 There is an entire day of the convention
3 devoted specifically to Ministry of Natural Resources
4 agenda items, there are regional workshops at the
5 convention where any tourist operator who is a member
6 of that region can come to an area and discuss with the
7 regional director and his staff any decisions which
8 have been made in the past year, items such as the
9 tourism guidelines have been presented there. And I
10 could go on and on and on.

11 Again, there is the bear pit session many
12 of the major announcements -- certainly the major
13 announcements relative to tourism, relative to the
14 Ministry, and certainly relevant to timber management
15 planning and the Class EA have all been addressed
16 there. And probably the most recent one - talking
17 about meetings - was when the Deputy Minister, I
18 believe it was two years ago or three years ago, came -
19 and we are talking about meetings outside timber
20 management - the Deputy Minister in fact made a
21 commitment at the NOTOA Convention that every district
22 manager in northern Ontario would hold an annual
23 meeting with the tourist industry and not only would
24 they hold a meeting with the tourist industry, the
25 chairmanship of that meeting would revolve on an annual

1 basis, so one year MNR would chair the meeting, the
2 second year the industry, then back to MNR, and
3 specifically instructed the district managers at the
4 convention and specifically instructed them through
5 follow-up memos that access roads would be an agenda on
6 those meetings.

7 Q. Mr. Pyzer, what about formal and
8 informal contact with anglers and hunters; how does
9 that compare to what you have just described?

10 A. It parallels it exactly the same. I
11 won't go into the details, unless the Board wants me
12 to, again, let me just use Kenora district as an
13 example.

14 We have the Kenora Conservation Club --
15 Fish and Game Club, 200 and plus members. The very
16 same setup in terms of zones. I don't even know
17 actually if they are an affiliate of the Ontario
18 Federation of Anglers & Hunters, but we certainly are
19 in attendance at every executive meeting.

20 I personally have been along with all of
21 my staff. We have addressed issues that that group
22 wants us to talk about which -- and, in fact, they have
23 sat on the last two resource management plans, the
24 most current one being the Alneau Wildlife Management
25 Plan, and the one before that, the Clearwater Bay Trout

1 Steering Committee.

2 OFAH has a zone system not unlike NOTOA
3 in terms of having local zone meetings which are
4 comparable to say the KDCA and the NWOTOAs. We are in
5 attendance at those meetings. They also have the
6 annual conventions where the Minister and senior staff
7 attend. I can tell you that I believe it was April 1st
8 this past, about two months - what's today - two or
9 three months ago --

10 Q. Mr. Pyzer, I'm sorry to interrupt
11 you. Could you just slow down a little bit for the
12 reporters.

13 A. On April 1st relative to NOTOA the
14 meeting was held right here in Thunder Bay and I was
15 asked in fact to attend for the regional director and I
16 would suggest that 85 per cent of the discussion
17 revolved around access roads, timber management
18 planning and this class EA.

19 And I sat at the bear pit session and
20 answered the questions for those people and there was
21 follow-up correspondence from Rick Morgan asking to
22 clarify some of the points.

23 And, again, the only point I want to make
24 is that, yes, there is a parallel system; yes, we are
25 in attendance at those meetings; yes, timber management

1 is an issue; and, yes, we discuss it and we talk about
2 those problems and issues.

3 Q. And, Mr. Pyzer, who is Rick Morgan?

4 A. I'm sorry, he is the Executive
5 Director of the Ontario Federation of Anglers &
6 Hunters.

7 Q. Thank you. And do you believe your
8 experience in this regard is common across the area of
9 the undertaking?

10 A. It is common insofar as I have a
11 large tourist industry in Kenora District. There are
12 other districts that probably have a much smaller
13 tourist industry but a larger, maybe, angler and hunter
14 segment. But to the extent that they have large
15 segments of those stakeholder groups, absolutely it is
16 comparable.

17 Q. And, finally, you have made some
18 reference to the involvement of the Ministry of
19 Citizenship and Culture in mitigating effects of access
20 roads on, for instance, archaeological resources and
21 other values.

22 Are you aware of any examples where
23 archaeological resources have been identified where the
24 Ministry of Natural Resources worked with MCC and where
25 the measures you have identified were actually

1 implemented?

2 A. Yes. Again, I think Mr. Adamson
3 mentioned a couple. I was aware certainly of the one
4 there which isn't very far away, and I really can't
5 mention it because -- I guess I can if the Board wants
6 me to - but Citizenship and Culture asked us not to
7 identify that particular site for obvious reasons.

8 When we planned the North Sidney Road in
9 the Minaki Crown Management Unit we identified --
10 rather, the Ministry of Citizenship and Culture, as
11 part of the public consultation process, identified the
12 burial -- a particular burial area, burial grounds
13 area, archaeological site.

14 We had, I believe it was three
15 alternative road corridors. The one that they
16 identified, they asked us or said if we were going to
17 choose that particular route, would require one field
18 season. In fact, the specific request was: If you
19 build in that corridor, we want you to end the process,
20 back it up one year to give us the field season, so
21 that we can go in and physically remove the artifacts
22 and remove the relics, I guess, from the site at a cost
23 of \$80,000 -- I'm sorry, the \$80,000 was the cost for
24 us too. We did not choose that alternative.

25 While it was properly the preferred one

1 from an engineering and forestry perspective, we
2 selected another alternative which didn't have
3 citizenship and culture concerns with it. And I
4 believe the cost of choosing that other alternative,
5 because of that and some of the other reasons, was
6 approximately \$80,000.

7 On the Caution Lake Road, Caution Lake
8 Road north of Kenora off the Jones Road is another
9 example where the Ministry of Citizenship and Culture
10 through the planning process identified water crossing
11 concerns.

12 We did not cross the water crossings when
13 we wanted to, we did it in the winter time as requested
14 by MCC, we slowed the process down, we delayed certain
15 phases of construction so that they in fact could put
16 survey parties in there and confirm whether the site in
17 fact had the artifacts they thought might be there.

18 We did not do the grubbing and the
19 clearing that they asked us not to do, and I suppose
20 the other interesting point was in the end they did not
21 find any artifacts and we constructed the road.

22 MS. BLASTORAH: Mr. Chairman, those are
23 my questions of Mr. Pyzer.

24 I just have one small point I would like
25 to clarify before we break for the holiday. We

1 obviously are not starting cross-examination and I
2 would just like to clarify on the record that we won't
3 be precluded from talking to our witnesses over the
4 break because we haven't commenced cross.

5 THE CHAIRMAN: That's correct.

6 MS. BLASTORAH: And I was just wondering,
7 now that the parties who are here have heard the
8 evidence-in-chief, whether they are able to give a more
9 definite prediction of how long they will be so that we
10 can make some scheduling over the summer with regard to
11 preparation of future panels.

12 THE CHAIRMAN: Well, we can certainly run
13 through it quickly.

14 Ms. Swenarchuk, do you have any idea how
15 long you might be?

16 MS. SWENARCHUK: I have indicated one to
17 two days and that's what I will stay with.

18 THE CHAIRMAN: Mr. Edwards?

19 MR. EDWARDS: I will stay with three
20 days, Mr. Chairman.

21 MR. CASSIDY: Half a day.

22 THE CHAIRMAN: Ms. Seaborn?

23 MS. SEABORN: Half a day, Mr. Chairman.

24 THE CHAIRMAN: That brings us up to about
25 six days and there may be one or two other...

1 MR. FREIDIN: Mr. Hanna is not here.

2 THE CHAIRMAN: That's right. Mr. Hanna
3 is not here, Mr. Hunter is not here.

4 MS. BLASTORAH: Nor is anyone from Treaty
5 3.

6 THE CHAIRMAN: That's correct. Mr.
7 Reilly and Mr. Colborne. So I think it would be
8 probably reasonable to suggest that we would be two
9 hearing weeks with respect to cross, maybe even a
10 little longer if we go into re-examination extensively
11 as well.

12 MS. BLASTORAH: Thank you, Mr. Chairman.
13 I believe Mr. Freidin wants to address another matter.

14 MR. FREIDIN: Just so people know what's
15 going to happen on August the 8th, we have had contact
16 with Dr. Ritter and it appears that we can advise that
17 Dr. Ritter and Mr. Kingsbury will in fact be here
18 together on August the 8th.

19 There may be a bit of a time problem for
20 Mr. Ritter as to whether he can be here sort of for
21 three weeks, that sort of thing, but I perhaps should
22 advise that I have done a very brief canvassing of
23 people, I have spoken to everybody I believe that will
24 be here to cross-examine, except for Mr. Hanna, and
25 taking the maximum times that people gave, it looks

1 like we will be cross-examining -- pardon me,
2 cross-examination and direct would be 6.5 days; if we
3 take the minimum amount of time, we end up at four
4 days.

5 So that's based on a direct evidence of
6 one to one and a half days for both, that's total for
7 both Dr. Ritter and Mr. Kingsbury. So it appears that
8 if we add OFAH and give them some leeway we are
9 probably going to be able to finish that panel in maybe
10 two weeks, and maybe just over two weeks.

11 It might be, Mr. Chairman, that if it
12 appears that we are going to have -- or that Dr. Ritter
13 has a scheduling problem, we may ask the Board to sit
14 five days one or both of those weeks if it appears
15 necessary to get that panel finished so Dr. Ritter
16 wouldn't be inconvenienced any longer than he might
17 otherwise have to be.

18 THE CHAIRMAN: All right. So that's
19 going to be roughly two weeks for those two witnesses,
20 then we would be back to the cross-examination on this
21 panel which would be an additional two weeks.

22 MR. FREIDIN: Sounds like a minimum of
23 two weeks, right.

24 THE CHAIRMAN: Right.

25 MR. FREIDIN: When do we start on -- is

1 the 8th a Tuesday?

2 THE CHAIRMAN: I believe so, after the
3 Civic Holiday. The Civic Holiday I believe is on the
4 Monday.

5 MR. FREIDIN: All right. So we are
6 starting at one o'clock on the Tuesday and we will
7 have -- if we don't change anything, it's a short
8 Friday?

9 MS. SEABORN: We are sitting Friday.

10 MR. FREIDIN: We are sitting Friday?

11 THE CHAIRMAN: We are sitting that
12 Friday.

13 MR. FREIDIN: All right. Well, we will
14 see how it goes.

15 THE CHAIRMAN: Okay. Well, it appears
16 that we have reached the coveted moment of breaking
17 for the summer recess.

18 The Board wishes everyone a pleasant and
19 safe vacation. We will see you on August the 8th at
20 1:00 p.m.

21 Thank you.

22 ---Whereupon the hearing adjourned at 4:00 p.m., to be
23 reconvened on Tuesday, August 8th, 1989, commencing
24 at 1:00 p.m.

